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GALLUP

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March 04, 2016

Mr. John E. Kieling, Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg 1
Santa Fe, New Mexico 87505-6303

RE: INVESTIGATION REPORT SWMU NO. 10 SLUDGE PITS
WESTERN REFINING SOUTHWEST, INC. GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-MISC

Dear Mr. Kieling:

The enclosed Investigation Report was prepared pursuant to your Approval with Modification letter dated March 2, 2015. There were five comments in your letter that requested specific information to be included in the Investigation Report. Comment 1 is addressed in Figure 7. In Comment 2, you asked about an overflow pipe but no information could be found to confirm the presence of an overflow pipe. The information regarding removal of the sludge from the pits is addressed in report Section 2.2. The discussion on groundwater conditions requested in Comment 3 is included in report Section 4.2. Comment 4 requested information on historical use of chromium VI and Comment 5, which requested information regarding bioremediation and the backfill material, are both addressed in Section 2.2.

If there are any questions regarding the enclosed Investigation Report, please contact Mr. Ed Riege at (505) 722-0217.

Certification

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

Sincerely,

William Carl McClain

Mr. William Carl McClain
Vice President and Refinery Manager
Western Refining Southwest, Inc. – Gallup Refinery

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

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

EPA ID# NMD000333211

MARCH 2016

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List of Acronyms

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

WQCC	Water Quality Control Commission

Executive Summary

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

The activities completed include sampling and analysis of soils and groundwater throughout the location of the former Sludge Pits to determine current concentrations of any potential contaminants resulting from historical operations and to delineate any such historical releases. This area was previously investigated in 1990 and 1994 with the collection of numerous soil samples during the RCRA Facility Investigation (RFI). The current investigation began on April 28, 2015 and continued through May 14, 2015. This included the completion of 17 soil borings with 48 soil samples (excluding additional quality assurance samples) collected for analysis of potential site-related constituents (e.g., volatile and semi-volatile organics, total petroleum hydrocarbons, and metals). Temporary well completions were installed in 8 boreholes of the 17 soil borings where saturation was encountered to allow collection of groundwater samples. Eight groundwater samples (excluding additional quality assurance samples) were collected for analysis of potential site-related constituents (e.g., volatile and semi-volatile organics, total petroleum hydrocarbons (TPH), metals, and inorganic/general water quality parameters).

At the former Sludge Pits, twelve organic constituents (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, 2,4-dimethylphenol, 2-methylphenol, benzene, bromomethane, ethylbenzene, naphthalene, toluene, and xylenes) were detected at concentrations above their soil-to-groundwater [Dilution Attenuation Factor (DAF)= 20] screening levels but no individual organic constituents were reported at concentrations above their respective residential direct contact screening levels. Including diesel range organics (DRO) and motor oil range organics (MRO) with the aforementioned twelve individual organic constituents, the exceedances of screening levels occurred in 14 soil samples collected at nine soil borings (SWMU 10-4, SWMU 10-5,

SWMU 10-8, SWMU 10-9, SWMU 10-10, SWMU 10-11, SWMU 10-13, SWMU 10-14, and SWMU 10-17).

Five metals (arsenic, barium, cobalt, iron, and manganese) were detected in soils at concentrations above the DAF 20 soil-to-groundwater protection screening levels. Arsenic and iron were reported at concentrations above the DAF 20 soil-to-groundwater protection screening levels in all samples with detected concentrations. It is possible that many of these detections are reflective of naturally occurring concentrations but a site-specific background study will be required to make this determination.

There were numerous inorganic constituents (arsenic, barium, beryllium, chromium (total), cobalt, iron, lead, manganese, nickel, vanadium, chloride, and sulfate) detected at concentrations above residential/tap water screening levels in groundwater samples collected from the temporary well completions. These exceedances of screening levels for inorganic constituents occurred in every groundwater sampled analyzed. Seven organic constituents (1-methylnaphthalene, 2-methylnaphthalene, 1,2,4-trimethlybenzene,1,3,5-trimethylbenzene, benzene, MTBE, and naphthalene) were detected at concentrations above screening levels in three groundwater samples collected from soil borings SWMU 10-5, SWMU 10-11 and SWMU 10-15.

Western is recommending five additional soil borings to complete lateral delineation of impacts to soil and groundwater. In addition, a separate investigation is recommended to evaluate naturally occurring concentrations of inorganic constituents to determine if the observed concentrations of these constituents are related to site activities.

Section 1
Introduction

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

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

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

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

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

Section 2
Background

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

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

2.1 Sludge Pits (SWMU No. 10)

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

2.2 Operational History

The Sludge Pits were put into service in 1958 and were removed from service in 1980, when the sludge was removed and the pit area was covered with a layer of soil. The source of the fill soil is unknown, but the refinery has historically sourced fill from on-site borrow areas that were not used for site operations. The exact date in 1980 of the removal activity is unknown but the sludge materials in the pits were removed and placed in the RCRA Permitted Land Treatment Unit after the pits were removed from service (Geoscience Consultants, Ltd., 1985). The volume of materials removed is unknown. There were two pits that covered an area of approximately 130 feet by 80 feet and 70 feet by 50 feet with a depth of 2 feet (Figure 2). The pits were used to contain oily waste removed from the API Separator (e.g., K-051 API Separator Sludge).

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

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

2.3 Historical Site Investigations

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

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

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

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

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

Section 3
Scope of Activities

3.1 Soil Boring, Temporary Monitoring Well Installation and Sample Collection

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

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

3.1.1 Site Investigation

The scope of work for the investigation at the Sludge Pits consisted of the installation of a minimum of ten soil borings throughout the area of the former Sludge Pits. Borings were scheduled to be drilled to a minimum depth of 20 feet or to the top of bedrock. The scope of work required the collection of a groundwater sample if groundwater was encountered. During the investigation seven additional soil borings were added to the scope in an effort to delineate the extent of impacted soils as observed visually, from the results field screening using a photoionization detector (PID), or elevated concentrations in initial laboratory analytical reports. Fifty soil samples (excluding additional quality assurance samples) were collected for analysis of potential site-related constituents including Skinner List volatile and semi-volatile organics, total petroleum (i.e., gasoline, diesel, and motor oil range) hydrocarbons, Skinner List metals, iron, and manganese.

Samples were collected at the 17 locations shown on Figure 7. Thirteen soil borings were advanced using hollow stem augers. Eight of these borings were on the original scope of work. Five borings completed using hollow stem augers were added during the investigation. Temporary wells were installed in seven of these boreholes and were subsequently sampled. The following list provides a summary of the soil borings advanced using hollow stem augers:

- SWMU 10-1; advanced to 20 feet below ground level (bgl); temporary well installed;
- SWMU 10-3; advanced to 20 feet bgl; temporary well installed;
- SWMU 10-4; advanced to 20 feet bgl;

- SWMU 10-5; advanced to 24 feet bgl; temporary well installed;
- SWMU 10-7; advanced to 20 feet bgl;
- SWMU 10-8; advanced to 20 feet bgl;
- SWMU 10-9; advanced to 20 feet bgl;
- SWMU 10-10; advanced to 20 feet bgl;
- SWMU 10-11; additional boring; advanced to 20 feet bgl; temporary well installed;
- SWMU 10-12; additional boring; advanced to 22 feet bgl; temporary well installed;
- SWMU 10-13; additional boring; advanced to 20 feet bgl;
- SWMU 10-14; additional boring; advanced to 23 feet bgl; temporary well installed; and
- SWMU 10-15; additional boring; advanced to 20 feet bgl; temporary well installed.

Four soil borings were advanced using a hand auger. This deviation from the Investigation Work Plan was necessary when the soil boring location was not accessible to the drilling rig (e.g., uneven terrain, overhead electrical lines, and below grade utility lines). Two of these soil borings were on the original scope of work. Two of the soil borings completed with a hand auger were added during the investigation. A temporary well was installed in one of the boreholes and was subsequently sampled. The following list provides a summary of the soil borings advanced using a hand augers:

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

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

- SWMU 10-1; developed and sampled; yielded enough water for a full analytical suite;
- SWMU 10-3; developed and sampled; yielded enough water for a full analytical suite;
- SWMU 10-5; sampled only due to slow recharge rate; yielded enough water for a full analytical suite;

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

3.2 Collection and Management of Investigation Derived Waste

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

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

The Hall analytical report (#1505A00) is included in Appendix D.

Based on the analysis, 24 non-hazardous/non-regulated drums (4,384 pounds) were shipped off-site to Advanced Chemical Treatment Facility for disposal. All purge water and decontamination water was disposed in the refinery wastewater system upstream of the API Separator.

3.3 Surveys

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

Section 4
Field Investigation Results

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

4.1 Surface Conditions

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

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

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

4.2 Subsurface Conditions

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

4.2.1 Geology

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

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

An isopach map of the sand thickness is included as Figure 10. This reflects an absence of sand in the eastern portion of the investigation area with a thickness up to 9 feet measured in two borings (SWMU 10-11 and SWMU 10-14) in the western area. The sand is still present but thinner to the north at boring SWMU 10-15 and to the southwest in boring SWMU 10-16. A second map (Figure 11) was prepared to show the current elevation on top of the bedrock (Chinle Group). This surface is probably reflective of the land surface present when the Quaternary alluvium was deposited. A comparison between the sand isopach map and the map of the bedrock surface elevation indicates a general lack of sand across most of the area with the highest surface elevations. There is a prominent northwest-southeast trending ridge on the elevation map with sand present only in boring SWMU 10-13 along this feature. The sand interval present in boring SWMU 10-13 is higher relative to the stratigraphically equivalent sand in other borings (e.g., SWMU 10-11 and SWMU 10-12) and is not saturated in boring SWMU 10-13. The surface elevation of the bedrock is not totally controlling of the sand distribution, as sand is also absent in the area of SWMU 10-5 even though there is a significant drop in the surface elevation at this location. Excavations for the sludge pits were

conducted in this area; however, there is no compelling evidence to indicate the excavations extended into the bedrock or otherwise altered the bedrock surface observed today.

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

4.2.2 Hydrogeology

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

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

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

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

4.3 Exploratory Drilling Investigations, Soil Sampling and Boring Abandonment

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

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

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

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

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

4.3.1 Soil Investigation

Thirteen soil borings were advanced using the hollow-stem auger (HSA) method to a minimum depth of 20 feet bgl and all of these soil borings were drilled to the bedrock (claystone/mudstone). Four soil borings were advanced using a hand auger due to accessibility limitations for the drilling rig and these borings did not reach bedrock. The drilling equipment and hand auger equipment was decontaminated between each borehole, as described in Appendix B. Detailed soil boring logs are included in Appendix C. The soil boring logs describe the subsurface lithology, the presence of saturation, the field screening results, and any temporary well construction details. The installation of soil borings and collection of soil samples are discussed below in numerical order.

<u>SWMU 10-1</u>

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

- 2 feet bgl - 4 feet bgl – Photoionization Detector (PID) reading - 25.7 ppm;

- 4 feet bgl - 6 feet bgl – Highest PID reading - 30.9 ppm; and
- 18 feet bgl - 20 feet bgl – Bottom of borehole, PID reading - 3.6 ppm.

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

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

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

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

<u>SWMU 10-2</u>

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

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

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

SWMU 10-3

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

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

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

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

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

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

SWMU 10-4

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

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

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

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

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

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

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

SWMU 10-5

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

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

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

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

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

SWMU 10-6

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

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

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

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

SWMU 10-7

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

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

No petroleum hydrocarbon odor or elevated PID readings were observed.

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

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

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

SWMU 10-8

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

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

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

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

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

SWMU 10-9

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

- 2 feet bgl - 4 feet bgl – PID reading of 19.1, no odor;

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

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

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

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

<u>SWMU 10-10</u>

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

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

The lithology encountered consisted of clayey sand from 0 feet bgl - 6 feet bgl with the PID readings of 11.9, 18.4, and 1685 ppm. The clayey sand exhibited a petroleum odor and black staining was observed. The clayey sand was compact to loose and dry to damp. A low plastic, soft, damp, sandy clay was encountered from 6 feet bgl – 10 feet bgl. Hydrocarbon odor and staining was observed in this interval. The PID readings were 1514 ppm (6 feet bgl – 8 feet bgl) and 686 ppm (8 feet bgl – 10 feet bgl). A silty clay was encountered from 10 feet bgl - 12 feet bgl. This clay also exhibited a hydrocarbon odor and hydrocarbon staining. The PID reading was 655 ppm. A claystone was

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

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

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

SWMU 10-11

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

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

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

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

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

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

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

SWMU 10-12

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

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

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

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

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

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

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

SWMU 10-13

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

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

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

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

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

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

SWMU 10-14

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

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

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

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

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

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

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

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

SWMU 10-15

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

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

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

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

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

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

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

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

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

<u>SWMU 10-16</u>

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

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

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

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

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

SWMU 10-17

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

4.4 Temporary Monitor Well Construction and Groundwater Sampling

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

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

4.4.1 Groundwater Investigation

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

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

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

<u>SWMU 10-1</u>

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

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

SWMU 10-3

On April 28, 2015 the drilling rig was set up on location SWMU 10-3. The boring was installed using the HSA drilling method. Groundwater was encountered in sand seams that were identified in a sandy clay interval, which extended from 8 feet bgl to 12 feet bgl. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 4 feet bgl to 14 feet bgl to cover the length of the silty clay from 8 feet bgl to 12 feet bgl, which was very moist and indicated the greatest potential to yield groundwater. The screen also extended to the top of bedrock to encounter any groundwater accumulating on this surface. A filter pack was installed to approximately 2 feet bgl. A bentonite seal was installed to approximately 1 foot bgl. The top of casing was approximately 3.13 feet above ground level.

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

SWMU 10-5

On April 29, 2015 the drilling rig was set up on location SWMU 10-5. The boring was installed using the HSA drilling method. Groundwater saturation was not readily apparent during the collection of soil samples, which consisted clay from the land surface to the top of bedrock at 22 feet bgl. A temporary well was constructed of 2-inch Schedule 40 PVC screen and casing. The well was installed with the screened interval ranging from 12 feet bgl to 22 feet bgl to include the top of bedrock. A filter pack was installed to approximately 10 feet bgl. A bentonite seal was installed to

approximately 9 feet bgl. The top of casing was approximately 3.00 feet above ground level. The well was gauged immediately after the installation of the well materials. No groundwater was detected in the well. The total depth of the well was 24.48 feet btoc (21.48 feet bgl).

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

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

On May 4, 2015 the well casing and screen were removed from the borehole. Separate phase hydrocarbon (SPH) was observed on the outside of the well casing at approximately three to six feet below ground level. This is above the level to which groundwater recovered and there was no indication of SPH in the soil samples, thus the source of the SPH is not readily apparent. The borehole was grouted.

SWMU 10-11

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

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

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

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

SWMU 10-12

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

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

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

SWMU 10-14

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

feet bgl, sandy clay from 8 feet bgl to 10 feet bgl, and clayey gravelly sand was encountered from 10 feet bgl to 16 feet bgl.

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

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

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

SWMU 10-15

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

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

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

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

SWMU 10-16

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

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

Section 5
Regulatory Criteria

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

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

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

The aforementioned Table 5 has soil screening levels for the soil-to-groundwater pathway that are based on a dilution/attenuation factor (DAF) of 1.0, which is NMED's most conservative screening level for this pathway. A review of site conditions (i.e., predominance of very fine-grained soils and limited occurrence of groundwater with low yields) indicates that a DAF of 1.0 is overly conservative, thus NMED's DAF value of 20, which was chosen to better reflect site-specific conditions at the

location of the former Sludge Pits. NMED has indicated that a DAF of 20 with 0.5 acre source areas is protective of groundwater where fine-grained sand is present (NMED, 2015).

The screening levels that are compared to individual soil sample results from SWMU No. 10 (Sludge Pits) are presented in Table 7. The screening levels included in Table 7 are based on residential and non-residential land use and include a screening level to evaluate the potential for constituents to migrate to groundwater using DAF value of 20. For the non-residential screening levels, the lower of the construction worker scenario and commercial/industrial scenario screening levels for each constituent is included in the data tables if NMED screening levels are available. If NMED soil screening levels are not available for a particular constituent, then EPA soils screening levels are used. If an EPA soil screening level is for a carcinogenic compound, then the screening level is multiplied by 10 to bring the risk level to 1E-05 to be consistent with the NMED screening levels. The screening levels in Table 7 have not been segregated based on depth of the soil sample as discussed above for Table 5. The screening levels that are compared to individual groundwater sample results from SWMU No. 10 are presented in Table 8.

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

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

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

Some of the individual constituents reported by the laboratory do not have screening levels but were all non-detect with respect to soil, except 4-isopropyltoluene and 3+4-methylphenol. With respect to groundwater, there were also detections of constituents that do not have screening levels. The constituents detected in groundwater that do not have screening levels include, 4-isopropyltoluene, 4-methyl-2-pentanone, n-butylbenzene, n-propylbenzene, and sec-butylbenzene. None of these constituents are classified as a known carcinogen.

Section 6
Site Impacts

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

6.1 Soil Analytical Results

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

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

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

Analyte	Analytical Method
Antimony	SW-846 Method 6010B
Arsenic	SW-846 Method 6010B
Barium	SW-846 Method 6010B
Beryllium	SW-846 Method 6010B
Cadmium	SW-846 Method 6010B
Chromium	SW-846 Method 6010B
Cobalt	SW-846 Method 6010B
Cyanide	SW-846 Method 9012B

Analyte	Analytical Method
Hexavalent Chromium	SW-846 Method 3060A/7196A
Iron	SW-846 Method 6010B
Lead	SW-846 Method 6010B
Mercury	SW-846 Method 7471
Manganese	SW-846 Method 6010B
Nickel	SW-846 Method 6010B
Selenium	SW-846 Method 6010B
Silver	SW-846 Method 6010B
Vanadium	SW-846 Method 6010B
Zinc	SW-846 Method 6010B

The analytical results for soil samples collected at the former Sludge Pits are summarized in Table 7. The individual results that exceed the applicable cleanup levels are highlighted, as noted in the table footnotes. Maps showing the distribution of constituents detected in soils above the lowest applicable screening levels are included as Figures 13 through 27, with the exception of bromomethane, toluene, 2,4-dimethylphenol, and 2-methylphenol. These four constituents were detected in only a single soil sample at a concentration above the respective screening level and are discussed below. The concentrations shown on figures that exceed the screening levels in Table 7 are underlined on the figures. The laboratory analytical reports are included in Appendix D and the data validation of the results, which includes the analytical results for the associated QA/QC samples, is included in Appendix E.

The constituents that have concentrations in soils above screening levels as measured in samples collected from the Sludge Pits are discussed below.

Arsenic was detected at concentrations above the DAF screening level of 0.299 mg/kg in all of but two of the 48 soil samples analyzed. The concentrations are shown on Figure 13. The detected concentrations range from 0.84 mg/kg to 2.6 mg/kg. All sample results are less than the residential

soil screening level of 4.25 mg/kg. Although a site-specific background concentration has not been determined for arsenic, it is possible these relatively low concentrations are reflective naturally occurring concentrations of arsenic in site soils.

Barium was detected at concentrations above the DAF screening level of 2,700 mg/kg in one soil sample [SWMU 10-3 (6-8')] at a concentration of 2,900 mg/kg. The detected concentrations range from 52 to 2,900 mg/kg. The concentrations are plotted on Figure 14. All sample results are less than the residential soil screening level of 15,600 mg/kg and the non-residential soil screening level of 4,350 mg/kg.

Cobalt was detected at concentrations above the DAF screening level of 5.4 mg/kg in 19 soil samples [SWMU 10-1 (18-20'), SWMU 10-3 (6-8'), SWMU 10-3 (18-20'), SWMU 10-4 (18-20'), SWMU 10-5 (0-2'), SWMU 10-5 (22-24'), SWMU 10-6 (10-12'), SWMU 10-7 (4-6'), SWMU 10-7 (18-20'), SWMU 10-8 (18-20'), SWMU 10-9 (18-20'), SWMU 10-10 (18-20'), SWMU 10-11 (18-20'), SWMU 10-12 (6-8'), SWMU 10-12 (20-22'), SWMU 10-13 (6-8'), SWMU 10-13 (18-20'), SWMU 10-15 (18-20'), and SWMU 10-16 (8-9')] as indicated with highlighting in Table 7. The detected concentrations range from 1 to 9.1 mg/kg. The concentrations are plotted on Figure 15. All sample results are less than the residential soil screening level of 23 mg/kg. It was observed that the samples with the higher concentrations were consistently collected from the deepest sampled intervals, often from the bedrock that did not otherwise indicate the presence of contamination. The detections of cobalt above screening levels may be reflective of naturally occurring concentrations but a site-specific evaluation of background concentrations will be necessary to evaluate this hypothesis.

Iron was detected at concentrations above the DAF screening level of 7,000 mg/kg in all 48 soil samples analyzed. The concentrations are shown on Figure 16. The detected concentrations range from 7,200 mg/kg to 24,000 mg/kg. All sample results are less than the residential soil screening level of 55,000 mg/kg. It is likely that many of the reported iron concentrations are reflective of naturally occurring concentrations.

Manganese was detected at concentrations above the DAF screening level of 560 mg/kg in 17 soil samples [SWMU 10-2 (0-2'), SWMU 10-3 (2-4'), SWMU 10-3 (6-8'), SWMU 10-3 (18-20'), SWMU 10-4 (18-20'), SWMU 10-5 (0-2'), SWMU 10-5 (22-24'), SWMU 10-6 (10-12'), SWMU 10-7 (2-4'), SWMU 10-7 (4-6'), SWMU 10-8 (18-20'), SWMU 10-9 (18-20'), SWMU 10-10 (18-20'), SWMU 10-11 (18-20'), SWMU 10-12 (20-22'), SWMU 10-15 (18-20'), and SWMU 10-16 (8-9')] as indicated with

highlighting in Table 7. The detected concentrations range from 94 to 1,300 mg/kg. The concentrations are plotted on Figure 17. All sample results are less than the residential soil screening level of 1,800 mg/kg. Somewhat similar to cobalt, it was observed that many, but not all, of the samples with the higher concentrations were collected from the deepest sampled intervals, often from the bedrock that did not otherwise indicate the presence of contamination. It is likely that many of the reported manganese concentrations are reflective of naturally occurring concentrations.

There were six soil samples with concentrations of 1,2,4-trimethylbenzene above the DAF screening level of 0.42 mg/kg [SWMU 10-5 (4-6'), SWMU 10-8 (2-4'), SWMU 10-10 (4-6'), SWMU 10-11 (8-10'), SWMU 10-13 (6-8'), and SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. The detected concentrations range from 0.0004 to 27 mg/kg. The concentrations are plotted on Figure 18. All sample results are less than the residential soil screening level of 58 mg/kg.

There were four soil samples with concentrations of 1,3,5-trimethylbenzene above the DAF screening level of 3.4 mg/kg [SWMU 10-5 (4-6'), SWMU 10-8 (2-4'), SWMU 10-10 (4-6'), and SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. The detected concentrations range from 0.000318 to 10 mg/kg. The concentrations are plotted on Figure 19. All sample results are less than the residential soil screening level of 780 mg/kg.

1-Methylnaphthalene was detected at concentrations above the DAF screening level of 0.116 mg/kg in 13 soil samples [SWMU 10-4 (2-4'), SWMU 10-5 (0-2'), SWMU 10-5 (2-4'), SWMU 10-5 (4-6'), SWMU 10-5 (14-16'), SWMU 10-8 (2-4'), SWMU 10-8 (4-6'), SWMU 10-9 (4-6'), SWMU 10-10 (4-6'), SWMU 10-11 (4-6'), SWMU 10-11 (8-10'), SWMU 10-13 (6-8'), and SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. The detected concentrations range from 0.000843 to 76 mg/kg and all detected concentrations are less than the residential screening level of 180 mg/kg. The concentrations are plotted on Figure 20.

2-Methylnaphthalene was detected at concentrations above the DAF screening level of 3.8 mg/kg in 7 soil samples [SWMU 10-5 (4-6'), SWMU 10-8 (2-4'), SWMU 10-10 (4-6'), SWMU 10-11 (4-6'), SWMU 10-11 (8-10'), SWMU 10-13 (6-8'), and SWMU 10-17 (6-8') as indicated with highlighting in Table 7. The detected concentrations range from 0.000852 to 130 mg/kg and all detected concentrations are less than the residential screening level of 240 mg/kg. The concentrations are plotted on Figure 21.

Benzene was detected at concentrations above the DAF screening level of 0.038 mg/kg in seven soil samples [SWMU 10-5 (2-4'), SWMU 10-5 (4-6'), SWMU 10-5 (14-16'), SWMU 10-8 (2-4'), SWMU 10-8 (4-6'), SWMU 10-10 (4-6'), and SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. The detected concentrations range from 0.000788 to 8 mg/kg. The concentrations are plotted on Figure 22. All sample results are less than the residential soil screening level of 17.8 mg/kg.

There was one soil sample with a concentration of bromomethane above the DAF screening level of 0.0343 mg/kg [SWMU 10-11 (4-6')] as indicated with highlighting in Table 7. The detected concentrations range from 0.023 mg/kg to 0.12 mg/kg. All sample results are less than the residential soil screening level of 17.7 mg/kg.

There were five soil samples with a concentration of ethylbenzene above the DAF screening level of 0.262 mg/kg detected samples [SWMU 10-5 (4-6'), SWMU 10-8 (2-4'), SWMU 10-10 (4-6'), SWMU 10-13 (6-8'), and SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. The detected concentrations range from 0.000313 mg/kg to 14 mg/kg. The concentrations are plotted on Figure 23. All sample results are less than the residential soil screening level of 75.1 mg/kg.

Naphthalene was detected at concentrations above the DAF screening level of 0.0823 mg/kg in 12 soil samples [SWMU 10-5 (0-2'), SWMU 10-5 (2-4'), SWMU 10-5 (4-6'), SWMU 10-5 (14-16'), SWMU 10-8 (2-4'), SWMU 10-8 (4-6'), SWMU 10-9 (4-6'), SWMU 10-10 (4-6'), SWMU 10-11 (4-6'), SWMU 10-11 (8-10'), SWMU 10-13 (6-8'), and SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. The detected concentrations range from 0.000725 mg/kg to 26 mg/kg. The concentrations are plotted on Figure 24. All sample results are less than the residential soil screening level of 49.7 mg/kg.

There was one soil sample with a concentration of toluene above the DAF screening level of 12.1 mg/kg [SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. The detected concentrations range from 0.000255 to 34 mg/kg. All sample results are less than the residential soil screening level of 5,230 mg/kg.

There were five soil samples with a concentration of xylenes above the DAF screening level of 2.98 mg/kg detected samples [SWMU 10-5 (4-6'), SWMU 10-8 (2-4'), SWMU 10-10 (4-6'), SWMU 10-13 (6-8'), and SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. The detected concentrations range from 0.00108 mg/kg to 86 mg/kg. The concentrations are plotted on Figure 25. All sample results are less than the residential soil screening level of 871 mg/kg.

There was one soil sample with a concentration of 2,4-dimethylphenol above the DAF screening level of 6.45 mg/kg [SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. This was also the only sample that had a detected concentration, which was 36 mg/kg. All sample results are less than the residential soil screening level of 1,230 mg/kg.

There was one soil sample with a concentration of 2-methylphenol (cresol,-o) above the DAF screening level of 15 mg/kg [SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. This was also the only sample that had a detected concentration, which was 56 mg/kg. All sample results are less than the residential soil screening level of 3,200 mg/kg.

Diesel Range Organics were detected at concentrations above the residential soil screening level of 1,000 mg/kg in nine soil samples [SWMU 10-4 (2-4'), SWMU 10-5 (0-2'), SWMU 10-5 (4-6'), SWMU 10-8 (2-4'), SWMU 10-10 (4-6'), SWMU 10-11 (4-6'), SWMU 10-13 (6-8'), SWMU 10-14 (6-8') and SWMU 10-17 (6-8')] as indicated with highlighting in Table 7. The detected concentrations range from 24 to 9,700 mg/kg. The concentrations are plotted on Figure 26.

Motor Oil Range Organics were detected at concentrations above the residential soil screening level of 1,000 mg/kg in three soil samples [SWMU 10-5 (0-2'), SWMU 10-8 (2-4'), and SWMU 10-10 (4-6')] as indicated with highlighting in Table 7. The detected concentrations range from 53 mg/kg to 5,900 mg/kg. The concentrations are plotted on Figure 27.

6.2 Groundwater Analytical Results

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

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

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

Analyte	Analytical Method
Antimony	SW-846 Method 200.8

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

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

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

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

The analytical results and the applicable cleanup levels are presented in Table 8. The individual results that exceed the applicable cleanup levels are highlighted. Maps depicting the distribution of the various constituents detected in groundwater samples above the screening levels are provided in Figures 28 through 38, with the concentrations that exceed the screening levels underlined. The results for the associated QA/QC samples and the data validation are provided in Appendix E. The laboratory analytical reports are included in Appendix D.

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

Arsenic was detected above the screening level of 0.01 mg/l in six of the seven samples collected when reviewing both the total and dissolved analyses. This includes samples collected at SWMU 10-1, SWMU 10-3, SWMU 10-5, SWMU 10-11, SWMU 10-12, SWMU 10-14, and SWMU 10-15. The higher of the two results (total and dissolved analyses) are shown on Figure 28. The detected arsenic results range from 0.003 to 0.029 mg/l.

For the total analyses, barium was detected above the screening level of 0.004 mg/l in three of the seven samples collected, including SWMU 10-11, SWMU 10-12, and SWMU 10-14 with concentrations ranging from 5.3 mg/l to 7.3 mg/l. However, none of the samples from the dissolved analyses exceed the screening level of 1.0 mg/l. The dissolved analyses range from 0.085 mg/l to 0.45 mg/l.

Similar to barium, beryllium was detected above the screening level of 2.0 mg/l in three of the seven samples collected, including SWMU 10-11, SWMU 10-12, and SWMU 10-14 with concentrations ranging from 0.017 mg/l to 0.037 mg/l. However, none of the samples from the dissolved analyses exceed the screening level. The detected dissolved analyses range from 0.0004 mg/l to 0.0009 mg/l.

Chromium and vanadium were both detected above their respective screening levels in the total analyses of groundwater samples collected from the same three temporary wells (SWMU 10-11,

SWMU 10-12, and SWMU 10-14), while none of the dissolved analyses exceed screening levels. Chromium total analyses for detected results range from 0.0051 mg/l to 0.17 mg/l vs. the screening level of 0.05 mg/l. Dissolved analyses (detected results) for total chromium range from 0.0039 mg/l to 0.0094 mg/l. All results for chromium VI were non-detect. The detected results for total vanadium range from 0.01 mg/l to 0.17 mg/l in comparison to a screening level of 0.0631 mg/l. The detected results for dissolved vanadium range from 0.002 mg/l to 0.016 mg/l.

Cobalt (total analyses) was detected at concentrations above the screening in five (SWMU 10-1, SWMU 10-11, SWMU 10-12, SWMU 10-14, and SWMU 10-15) of the seven groundwater samples collected, but none of the dissolved analyses exceed the screening level. The total cobalt analyses range from 0.0056 mg/l to 0.14 mg/l vs. the screening level of 0.006 mg/l. The dissolved analyses for cobalt range from 0.0035 mg/l to 0.023 mg/l in comparison to the screening level of 0.05 mg/l.

Iron was detected above the screening level in samples analyzed for total (four exceedances at SWMU 10-1, SWMU 10-11, SWMU 10-12 and SWMU 10-14) and dissolved analyses (two exceedances at SWMU 10-12 and SWMU 10-14). The total analyses range from 2.6 mg/l to 140 mg/l in comparison to a screening level of 13.8 mg/l. The dissolved analyses range from 0.011 mg/l to 3.9 mg/l vs. a screening level of 1.0 mg/l. The dissolved analyses results are shown on Figure 29.

Lead (total analyses) was detected at concentrations above the screening in four (SWMU 10-1, SWMU 10-11, SWMU 10-12, and SWMU 10-14) of the seven groundwater samples collected, but none of the dissolved analyses exceed the screening level. The total lead analyses range from 0.0024 mg/l to 0.28 mg/l vs. the screening level of 0.015 mg/l. The dissolved analyses for lead range from 0.00074 mg/l to 0.0068 mg/l in comparison to the screening level of 0.015 mg/l.

Manganese was detected above the screening levels in both total and dissolved analyses. The total screening level of 2.0 mg/l was exceeded in four of the groundwater samples collected at temporary wells SWMU 10-11, SWMU 10-12, SWMU 10-14, and SWMU 10-15. The total analyses results range from 0.52 mg/l to 22 mg/l. All seven of the analyses of groundwater detected concentrations of dissolved manganese above the screening level of 0.2 mg/l, with concentrations ranging from 0.27 mg/l to 3.9 mg/l. The dissolved analyses results are shown on Figure 30.

One groundwater sample, which was collected at temporary well SWMU 10-15, has concentrations of nickel that exceed the screening level of 0.372 mg/l in both total and dissolved analyses. The

detected results for the total analyses range from 0.0044 mg/l to 0.64 mg/l, while the detected results for dissolved analyses range from 0.0028 mg/l to 0.65 mg/l. The dissolved analyses are shown on Figure 29.

Chloride was detected above the screening level in all seven groundwater samples with concentrations ranging from 330 mg/l to 7,100 mg/l vs. the screening level of 250 mg/l. Sulfate was detected above the screening level of 600 mg/l in one groundwater sample collected at temporary well SWMU 10-3. The sulfate concentrations range from 310 mg/l to 1,100 mg/l. The chloride and sulfate concentrations are shown on Figure 31.

1,2,4-Trimethylbenzene was detected above the screening level of 15 micrograms per liter (ug/l) in the groundwater sample collected at SWMU 10-11 at a concentration of 64 ug/l. The detected concentrations range from 0.18 ug/l to 64 ug/l and are shown on Figure 32.

The screening level for 1,3,5-Trimethylbenzene was exceeded in the groundwater sample collected at SWMU 10-11, with a detected result of 22 ug/l vs. the screening level of 12 ug/l. The detected concentrations range from 3.9 ug/l to 22 ug/l and are shown on Figure 33.

1-Methylnaphthalene was detected above the screening level of 11 ug/l in the groundwater sample collected at SWMU 10-11 at a concentration of 70 ug/l. The detected concentrations range from 3.1 ug/l to 70 ug/l and are shown on Figure 34.

2-Methylnaphthalene was detected above the screening level of 36 ug/l in the groundwater sample collected at SWMU 10-11 at a concentration of 98 ug/l. The detected concentrations range from 1.5 ug/l to 98 ug/l and are shown on Figure 35.

The screening level for benzene was exceeded in the groundwater sample collected at SWMU 10-5, with a detected result of 27 ug/l vs. the screening level of 5 ug/l. The detected concentrations range from 0.24 ug/l to 27 ug/l and are shown on Figure 36.

Methyl tert-butyl ether (MTBE) was detected slightly above the screening level of 143 ug/l in one groundwater sample, which was collected at SWMU 10-15, at a concentration of 150 ug/l. The detected concentrations range from 5.5 ug/l to 150 ug/l and are shown on Figure 37.

Naphthalene was detected above the screening level of 1.65 ug/l in a single groundwater sample collected at SWMU 10-11 at a concentration of 45 ug/l. The detected concentrations range from 0.52 ug/l to 45 ug/l and are shown on Figure 38.

6.3 General Groundwater Chemistry

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

Section 7
Conclusions and Recommendations

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

7.1 Conclusions

A cumulative risk evaluation for soils is presented in Table 9. The evaluation was conducted by taking the maximum reported soil concentration of each detected constituent and dividing by the residential screening level and non-residential screening levels as shown in the equations below. These calculations are separated for carcinogenic and non-carcinogenic constituents. The cumulative carcinogenic risk is 2.2 x 10^{-5} assuming residential land use and 5.19 x 10^{-6} for non-residential land use. The hazard index for residential land use is 3.8 and for non-residential land use is 1.62.

$$Site\ Risk = \left(\frac{conc_x}{SSL_x} + \frac{conc_y}{SSL_y} + \frac{conc_z}{SSL_z} + \cdots + \frac{conc_i}{SSL_i}\right) \times 10^{-5}$$

$$Site\ Hazard\ Index\ (HI) = \left(\frac{conc_x}{SSL_x} + \frac{conc_y}{SSL_y} + \frac{conc_z}{SSL_z} + \cdots + \frac{conc_i}{SSL_i}\right) \times 1$$

A cumulative risk evaluation for groundwater is presented in Table 10. The evaluation was conducted by taking the maximum reported concentration of each constituent detected in groundwater and dividing by the residential screening levels, as shown in the equation above in the discussion for soil. The dissolved analyses are used for metals where available. The cumulative carcinogenic risk level is calculated to be 4.17 x 10-4 and the hazard index is 69.3.

<u>Soils</u>

There are no reported concentrations in soil for individual constituents that exceed the residential soil screening levels. Only the results for DRO and MRO exceed the residential screening levels.

Five metals (arsenic, barium, cobalt, iron, and manganese) were detected at concentrations above the DAF 20 soil-to-groundwater protection screening levels. It is possible that many of these detections are reflective of naturally occurring concentrations but a site-specific background study

will be required to make this determination. Twelve organic constituents (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, 2,4-dimethylphenol, 2-methylphenol, benzene, bromomethane, ethylbenzene, naphthalene, toluene, and xylenes) were detected at concentrations above their soil-to-groundwater (DAF 20) screening levels. The soil samples with concentrations of individual constituents exceeding the soil-to-groundwater (DAF 20) screening levels are generally located within the central portion of the area investigated, at borings SWMU 10-5, SWMU 10-8, SWMU 10-9, SWMU 10-10, SWMU 10-11, SWMU 10-13, SWMU 10-14, and SWMU 10-17. In addition, there is one individual constituent (1-methylnaphthalene) detected above the screening level at SWMU 10-4.

DRO and/or MRO were detected at concentrations above the screening levels in the same soil samples that had detections of individual organics constituents above screening levels with the single exception of SWMU 10-14 (6-8'). The detection of DRO at a concentration of 1,200 mg/kg in comparison to the screening level 1,000 mg/kg in sample SWMU 10-14 (6-8') was defined to the southwest at boring SWMU 10-16.

The lateral extent of impacts to soil were defined to the east and southeast in borings SWMU 10-1, SWMU 10-2, and SWMU 10-7. The lateral extent was defined to the west at borings SWMU 10-12 and SWMU 10-16. The lateral extent was defined on the northeast corner at boring SWMU 10-15. The vertical extent of impacts at concentrations above the soil-to-groundwater (DAF 20) soil screening levels was defined at every boring location with the single exception of SWMU 10-17. Boring SWMU 10-17 was completed with a hand auger due to access limitations to a depth of 8 feet within an impacted interval. This same impacted interval (e.g., 6 feet– 8 feet) was also identified in nearby boring SWMU 10-13. Soil boring SWMU 10-13 was accessible to the drilling rig and this boring was extended to bedrock and the vertical extent of impacts was defined for this area.

Groundwater

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

There are a seemingly large number of metals detected at concentrations above residential/tap water screening levels in groundwater samples collected from the soil borings. The metals analytical

results may have been affected as the result of collecting groundwater samples at low producing temporary wells completions, which tend to produce more turbid water samples than permanent well completions in more productive aquifers. The metal screening levels were exceeded in every soil boring from which a groundwater sample was collected for metals analyses.

Seven organic constituents (1-methylnaphthalene, 2-methylnaphthalene, 1,2,4-trimethlybenzene,1,3,5-trimethylbenzene, benzene, MTBE, and naphthalene) were detected in groundwater samples collected from soil borings at concentrations above screening levels. Most of the reported concentrations are only slightly above the screening levels (i.e., generally less than one order of magnitude above the screening level). Benzene was only detected at one location (SWMU 10-5) above the screening of 5 ug/l, at 27 ug/l. Similarly, MTBE was detected above the screening level at a single location (SWMU 10-15) at a concentration of 150 ug/l vs. the screening level of 143 ug/l. Boring SWMU 10-15 is located cross- to up-gradient of most of the area of SWMU 10 (Figure 12). Based on the distribution of the MTBE concentrations and the hydraulic gradient, it appears that the elevated concentration of MTBE in boring SWMU 10-15 is more likely associated with the Aeration Basin than the former Sludge Pits. All of the other detections of organic constituents above screening levels occurred in the groundwater sample collected at boring SWMU 10-11.

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

7.2 Recommendations

Five additional soil borings are recommended to complete the lateral delineation of impacts to soil and groundwater. These additional borings will be installed and sample collection and analysis will be completed pursuant to the approved Investigation Work Plan for SWMU No. 10 (Western Refining Southwest, Inc. 2014). Western did install seven “additional” borings (SWMU 10-11 through SWMU 10-17) based on field observations. On January 4, 2016, Western communicated to NMED the

intention to install yet five more “additional” soil borings as described below but logistical issues prevented the installation of these borings before the due date of this Investigation Report.

An additional soil boring to the south of boring SWMU 10-8 is recommended to delineate the impacts to soil observed at depths of 2 feet bgl – 6 feet bgl (Figure 39). Saturation was not present in boring SWMU 10-8. Similarly, an additional boring is recommended to the east of boring SWMU 10-4, where soil impacts were observed from 2 feet bgl – 4 feet bgl. Saturation was not encountered at SWMU 10-4.

Three additional soil borings are recommended in the area north of boring SWMU 10-17 (Figure 39). Some of the higher concentrations observed in soil were found at a depth of 6 feet bgl – 8 feet bgl in boring SWMU 10-17. These three borings will focus on delineating the north extent of impacts from the former Sludge Pits.

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

Section 8
References

EPA, 1987, RCRA Facility Assessment Report Giant Ciniza Refinery, Gallup New, Mexico, p.76.

Giant Refining Company, 1991, RCRA Facility Investigation Phase II – Giant Refining Company, Gallup New Mexico, pp. 4.1 – 4.117.

Giant Refining Company, 1994, Report on Additional RFI Sampling, Ciniza Refinery, Gallup New Mexico.

Heckert, A.B. and Lucas, S.G., 1996, *Stratigraphic description of the Tr-4 unconformity in west-central New Mexico and eastern Arizona*: New Mexico Geology, Vol. 18, No. 3, pp. 61-70.

Lucas, S. G., Heckert, A.B., and Anderson, O. J., 1997, *Triassic Stratigraphy and Paleontology on the Fort Wingate quadrangle, west-central New Mexico*, New Mexico Geology, Vol. 19, No. 2. pp 33 - 42.

NMED, 2015, *Risk Assessment Guidance for Site Investigations and Remediation*, New Mexico Environment Department, p.91.

Practical Environmental Services, Inc., 1998, SWMU #10 Summary Report, Sludge Pits, Ciniza Refinery, McKinley County, New Mexico, p. 5.

Precision Engineering, 1996, *LTA Subsurface Conditions*, p. 4.

Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizel, N.H., and Padgett, E.T., 1983, *Hydrogeology and Water Resources of San Juan Basin, New Mexico*; Hydrogeologic Report 6, New Mexico Bureau of Mines and Mineral Resources, p. 70.

USDA, 2005, *Soil Survey of McKinley County Area, New Mexico, McKinley County and Parts of Cibola and San Juan Counties*, p. 683.

Western Refining, 2009, *Facility Wide Groundwater Monitoring Work Plan*, Western Refining Company Southwest, Inc., p. 78.

Western Refining Southwest, Inc., 2014, Investigation Work Plan, SWMU No. 10 Sludge Pits, p. 15.

Tables

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

Analyte	Sample ID	RFI1001 V0.0	RFI1001 V3.0	RFI1001 D3.0	RFI1003 V12.5	RFI1003 V9.0	RFI1003 V6.0	RFI1003 V3.0	RFI1003 V0.0	RFI1004 V0.0	RFI1004 V3.0	RFI1004 V6.0	RFI1004 V9.0	RFI1004 V12.5	RFI1005 V0.0	RFI1005 V3.0	RFI1005 V6.0	RFI1005 V9.0	RFI1005 V12.5	RFI1005 D3.0	RFI1002 V0.0	RFI1002 V3.0	RFI1002 V6.0	RFI1002 V9.0	RFI1002 V12.5	RFI1005 D12.5	NMED Soil Screening Levels				EPA Regional Soil Screening Levels			
	Sample Depth (ft)	0	3	3	12.5	9	6	3	0	0	3	6	9	12.5	0	3	6	9	12.5	3	0	3	6	9	12.5	12.5	Residential Soil (mg/kg)	Industrial/ Occupational Soil (mg/kg)	Construction Worker Soil (mg/kg)	Risk-based SSL for a DAF of 1 (mg/kg)	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Groundwater Protection Risk-based (mg/kg)	Groundwater Protection MCL-based (mg/kg)
	Sample Date	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990								
Metals																																		
Antimony	mg/kg	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	NA	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	3.13E+01	4.54E+02	1.24E+02	6.61E-01	3.10E+01	4.10E+02	6.60E-01	2.70E-01
Arsenic	mg/kg	**0.97**	<1.0	<0.50	<1.0	**0.52**	**0.58**	**0.90**	**0.65**	**0.60**	**0.64**	**2.4**	**0.6**	<1.0	<1.0	**0.52**	**27.9**	**0.58**	<1.0	NA	**0.52**	**0.79**	**0.58**	<1.0	<0.50	<0.50	3.90E+00	1.77E+01	5.30E+01	1.31E-02	3.90E-01	1.60E+00	1.30E-03	2.90E-01
Barium	mg/kg	**372**	107	105	**392**	152	178	292	**317**	280	195	**422**	213	164	**315**	**321**	**700**	48.7	187	NA	188	231	**332**	201	171	124	1.56E+04	2.23E+05	4.35E+03	3.01E+02	1.50E+04	1.90E+05	3.00E+02	8.20E+01
Beryllium	mg/kg	0.7	1.0	1.1	1.1	1.0	1.0	0.65	0.96	0.93	0.79	0.80	1.00	1.1	0.88	0.85	0.76	1.4	1.2	NA	1.0	0.90	0.90	1.4	0.87	1.1	1.56E+02	2.26E+03	1.44E+02	5.77E+01	1.60E+02	2.00E+03	5.80E+01	3.20E+00
Cadmium	mg/kg	<0.50	0.70	<0.50	0.73	<0.50	<0.50	<0.50	<0.50	<0.50	0.56	<0.50	<0.50	<0.50	<0.50	<0.50	**1.5**	<0.50	<0.50	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7.03E+01	8.97E+02	2.77E+02	1.37E+00	7.00E+01	8.00E+02	1.40E+00	3.80E-01
Chromium total results - CR III SL	mg/kg	60.1	6.1	7.8	7.5	5.9	6.5	6.1	9.5	5.6	11.6	398	21.7	7.2	6.8	6.3	4020	11.6	8.9	NA	7.0	117	6.7	8.0	6.4	6.1	1.17E+05	1.70E+06	4.65E+05	9.86E+07	1.20E+05	1.50E+06	9.90E+07	NA
Chromium total resutls - CR VI SL	mg/kg	**60.1**	**6.1**	**7.8**	**7.5**	**5.9**	**6.5**	**6.1**	**9.5**	**5.6**	**11.6**	**398**	**21.7**	**7.2**	**6.8**	**6.3**	**4020**	**11.6**	**8.9**	NA	**7.0**	**117**	**6.7**	**8.0**	**6.4**	**6.1**	2.97E+00	6.31E+01	6.56E+01	8.31E-03	2.30E+02	1.40E+03	2.10E+00	NA
Cobalt	mg/kg	**2.0**	**3.6**	**4.6**	**3.2**	**3.4**	**2.8**	**2.0**	**2.6**	**2.8**	**2.2**	**4.8**	**3.8**	**4.4**	**4.0**	**4.4**	**8.4**	**5.7**	**5.1**	NA	**4.3**	**4.4**	**3.9**	**6.0**	**5.4**	**3.9**	NA	NA	NA	NA	2.30E+01	3.00E+02	4.90E-01	NA
Copper	mg/kg	10.3	5.9	7.4	7.0	5.6	6.1	4.3	7.4	5.7	4.1	**29.0**	6.2	6.9	9.2	4.6	**215**	11.8	7.2	NA	6.4	16.5	5.2	7.7	7.7	7.8	3.10E+03	4.54E+04	1.24E+04	2.14E+01	NA	NA	NA	NA
Lead	mg/kg	11.1	5.5	6.3	7.8	8.1	6.5	5.5	8.4	8.2	7.0	50.0	12.5	13.3	13.2	11.8	337	16.1	14.2	NA	13.8	19.3	13.5	14.9	11.9	16.0	4.00E+02	8.00E+02	8.00E+02	NA	4.00E+02	8.00E+02	NA	NA
Mercury	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	**1.3**	<0.10	<0.10	<0.10	<0.10	**2.9**	<0.10	<0.10	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1.56E+01	7.36E+01	1.36E+01	3.27E-02	4.30E+00	2.40E+01	3.00E-02	1.00E-01
Nickel	mg/kg	7.0	6.7	9.1	8.5	6.8	6.5	5.4	6.5	6.1	5.3	9.0	7.9	8.0	5.8	6.8	19.2	11.3	9.3	NA	6.4	9.2	6.5	9.5	8.5	6.9	1.56E+03	2.25E+04	6.19E+03	4.77E+01	1.40E+04	6.90E+04	4.80E+01	NA
Potassium	mg/kg	972	1310	1660	1410	1340	1070	856	1020	853	783	2320	1200	1210	850	834	3920	1450	1250	NA	806	1310	841	1380	1410	1010	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.91E+02	5.68E+03	1.55E+03	9.65E-01	3.90E+02	5.10E+03	9.50E-01	2.60E-01
Vanadium	mg/kg	16.3	14.0	16.3	17.5	14.3	12.9	15.2	15.7	15.5	14.4	18.6	13.9	13.7	14.5	14.1	24.2	18.7	16.2	NA	15.4	18.2	18.8	16.5	18.0	14.0	3.91E+02	5.68E+03	1.55E+03	1.83E+02	5.50E+02	7.20E+03	2.60E+02	NA
Zinc	mg/kg	81.3	14.7	17.7	16.1	13.9	13.0	12.9	16.4	14.0	15.2	81.2	12.5	12.5	11.8	13.1	538	17.9	14.3	NA	13.4	228	11.2	15.2	15.0	12.4	2.35E+04	3.41E+05	9.29E+04	6.82E+02	2.30E+04	3.10E+05	6.80E+02	NA
Method 8240																																		
1,1,1- Trichloroethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.56E+04	7.89E+04	1.48E+04	2.91E+00	9.00E+03	3.90E+04	3.30E+00	7.20E-02
1,1,2,2-Tetrachloroethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8.02E+00	4.35E+01	2.21E+02	2.13E-04	5.90E-01	2.90E+00	2.80E-05	NA
1,1,2- Trichloroethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.81E+00	1.33E+01	4.72E+02	1.12E-04	1.10E+00	5.50E+00	8.20E-05	1.70E-03
1,1- Dichloroethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.45E+01	3.59E+02	1.70E+03	5.98E-03	3.40E+00	1.70E+01	7.00E-04	NA
1,1-Dichloroethene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.49E+02	2.29E+03	4.32E+02	1.16E-01	2.50E+02	1.10E+03	1.20E-01	2.60E-03
1,2,3-Trichloropropane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.97E-02	3.76E+01	7.23E+00	2.50E-06	9.10E-02	4.10E-01	4.40E-06	NA
1,2-Dichloroethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	7.89E+00	4.35E+01	5.87E+01	3.56E-04	4.50E-01	2.20E+00	4.40E-05	1.50E-03
1,2-Dichloropropane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.52E+01	8.44E+01	2.50E+01	1.07E-03	9.30E-01	4.70E+00	1.30E-04	1.70E-03
2-Butanone (MEK)	ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<120	<20	<5	<5	<340	<10	<5	<5	<5	<5	<5	<5	<5	<5	3.71E+04	3.75E+05	8.43E+04	1.27E+00	2.80E+04	1.90E+05	1.50E+00	NA
2-Hexanone	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	NA	2.0E+02	1.3E+03	8.8E-03	NA
4-Methyl-2-pentanone (MIBK)	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<120	<20	<5	<5	<340	<10	<5	<5	<5	<5	<5	<5	<5	<5	6.66E+04	8.68E+05	2.21E+05	3.86E+00	6.10E+04	6.10E+05	4.40E+00	NA
Benzene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.7**	<50.0	<12.0	<2.0	<0.5	<0.5	**37**	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.54E+01	8.47E+01	1.38E+02	1.73E-03	1.10E+00	5.60E+00	2.30E-04	2.80E-03
Bromodichloromethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.41E+00	3.01E+01	1.43E+02	2.71E-04	2.80E-01	1.40E+00	3.30E-05	NA
Bromoform	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.16E+02	2.42E+03	4.76E+03	6.04E-01	6.10E+01	2.20E+02	2.30E-03	NA
Bromomethane	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	1.65E+01	8.65E+01	1.64E+01	1.92E-03	7.90E+00	3.50E+01	2.20E-03	NA
Carbon disulfide	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.53E+03	8.33E+03	1.58E+03	2.83E-01	6.70E+02	3.00E+03	2.70E-01	NA
Carbon tetrachloride	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.08E+01	5.98E+01	2.26E+02	1.60E-03	2.50E-01	1.30E+00	7.90E-05	2.00E-03
Chlorobenzene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.76E+02	2.12E+03	4.06E+02	4.92E-02	3.10E+02	1.50E+03	6.80E-02	7.50E-02
Chloroethane	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.86E+00	3.27E+01	1.54E+02	4.59E-04	3.00E-01	1.50E+00	5.50E-05	NA
Chloromethane	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	2.75E+02	1.29E+03	2.41E+02	4.40E-02	1.20E+02	5.10E+02	4.90E-02	NA
1,2- Dichloroethene (cis/trans)	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.56E+02	2.27E+03	6.19E+02	1.84E-02	7.80E+02	1.00E+04	1.10E-01	2.10E-02
cis-1,3-Dichloropropene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.37E+01	1.77E+02	2.09E+02	1.24E-03	1.70E+00	8.40E+00	1.60E-04	NA
Di bromochloromethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.21E+01	6.24E+01	3.32E+02	3.31E-04	7.00E-01	3.40E+00	4.00E-05	NA
Dibromomethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	7.80E+02	1.00E+04	9.10E-02	NA
Dichlorodifluoromethane	ug/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<200	<50	<8	<2.0	<2.0	<130	<4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	1.68E+02	7.98E+02	1.49E+02	3.72E-01	1.90E+02	7.80E+02	6.10E-01	NA
Ethylbenzene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**5.6**	**81**	**43**	<2.0	<0.5	<0.5	**76**	**1.2**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.84E+01	3.78E+02	1.83E+03	1.30E-02	5.70E+00	2.90E+01	1.90E-03	8.90E-01
Methylene chloride	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.09E+02	4.70E+03	1.12E+03	4.12E-02	1.10E+01	5.40E+01	1.20E-03	1.30E-03
Styrene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	7.28E+03	5.00E+04	9.99E+03	1.39E+00	6.50E+03	3.80E+04	2.00E+00	1.20E-01
Tetrachloroethene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	7.02E+00	3.66E+01	2.12E+02	4.30E-04	5.70E-01	2.70E+00	5.20E-05	2.40E-03
Toluene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**14**	**220**	**120**	<2.0	<0.5	<0.5	**290**	**2.6**	0.98	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.68	5.27E+03	5.77E+04	1.34E+04	1.27E+00	5.00E+03	4.60E+04	1.70E+00	7.60E-01
trans-1,2-Dichloroethene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.70E+02	1.44E+03	2.73E+02	2.69E-02	1.10E+02	5.00E+02	3.40E-02	3.20E-02
trans-1,3-Dichl oropropene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.37E+01	1.77E+02	2.09E+02	1.24E-03	1.70E+00	8.40E+00	1.60E-04	NA
Trichloroethene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8.77E+00	4.13E+01	7.68E+00	1.05E-03	2.80E+00	1.40E+01	6.10E-04	1.90E-03
Trichlorofluoromethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.41E+03	6.94E+03	1.30E+03	8.89E-01	8.00E+02	3.40E+03	8.40E-01	NA
Vinyl chloride	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<2.5	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	7.28E-01	2.61E+01	1.49E+02	5.42E-05	6.00E-02	1.70E+00	5.60E-06	7.00E-04
Xylenes (total)	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**54**	**470**	**310**	<2.0	<0.5	<0.5	**540**	**9.7**	**1.7**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.98**	8.14E+02	3.98E+03	7.43E+02	1.56E-01	6.00E+02	2.60E+03	2.30E-01	1.10E+01
Vinyl acetate	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	2.56E+03	1.23E+04	2.30E+03	7.59E-02	NA	NA	NA	NA
2-Chloroethyl vinyl ether	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	ug/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<100	<250	<40	<10	<10	<670	<20	<10	<10	<10	<10	<10	<10	<10	<10	4.04E-01	1.92E+00	3.56E-01	7.28E-06	NA	NA	NA	NA
Acrylonitrile	ug/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<100	<250	<40	<10	<10	<670	<20	<10	<10	<10	<10	<10	<10	<10	<10	4.55E+00	2.43E+01	3.76E+01	8.46E-05	NA	NA	NA	NA
Ethanol	ug/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<100	<250	<40	<10	<10	<670	<20	<10	<10	<10	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA
Ethyl methacrylate	ug/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<25	<4	<1	<1	<67	<2	<1	<1	<1	<1	<1	<1	<1	<1	4.55E+03	3.80E+04	2.79E+04	1.14E-01	NA	NA	NA	NA
Iodomethane	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,4-Dichloro-2-butene	ug/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50.0	<12.0	<2.0	<0.5	<0.5	<34.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	7.4E-03	3.2E-02	6.2E-07	NA
Method 8270																																		
1,2,4,5-Tetrachlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	7.30E+01	3.67E+02	6.87E+01	9.13E-03	8.70E+01	4.00E+02	1.30E-02	1.10E-01
1,2- Dichlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	2.31E+03	1.40E+04	2.71E+03	2.80E-01	2.00E+03	1.00E+04	4.00E-01	6.60E-01
1,3- Dichlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
1,4- Dichlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.17E+01	1.77E+02	8.31E+02	3.19E-03	2.60E+00	1.30E+01	4.60E-04	8.10E-02
2,4,5-Trichlorophenol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	6.11E+03	6.84E+04	2.38E+04	1.04E+01	6.10E+03	6.20E+04	9.40E+00	NA
2,4,6-Trichlorophenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.11E+01	6.84E+02	2.38E+02	1.04E-01	4.40E+01	1.60E+02	1.60E-02	NA
2,4-Dichlorophenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.83E+02	2.05E+03	7.15E+02	9.98E-02	1.80E+02	1.80E+03	1.80E-01	NA
2,4-Dimethylphenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**27**	<5.0	<5.0	<5.0	<5.0	<100	**12**	**79**	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**5.3**	1.22E+03	1.37E+04	4.76E+03	6.65E-01	1.20E+03	1.20E+04	1.20E+00	NA
2,4-Dinitrophenol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	1.22E+02	1.37E+03	4.76E+02	6.31E-02	1.20E+02	1.20E+03	6.80E-02	NA
2,4-Dinitrotoluene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.57E+01	6.18E+01	4.76E+02	2.25E-03	1.60E+00	5.50E+00	2.00E-04	NA
2,6-Dichlorophenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.11E+01	6.84E+02	2.38E+02	3.85E-02	6.10E+01	6.20E+02	3.40E-02	NA

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

Analyte	Sample ID	RFI1001 V0.0	RFI1001 V3.0	RFI1001 D3.0	RFI1003 V12.5	RFI1003 V9.0	RFI1003 V6.0	RFI1003 V3.0	RFI1003 V0.0	RFI1004 V0.0	RFI1004 V3.0	RFI1004 V6.0	RFI1004 V9.0	RFI1004 V12.5	RFI1005 V0.0	RFI1005 V3.0	RFI1005 V6.0	RFI1005 V9.0	RFI1005 V12.5	RFI1005 D3.0	RFI1002 V0.0	RFI1002 V3.0	RFI1002 V6.0	RFI1002 V9.0	RFI1002 V12.5	RFI1005 D12.5	NMED Soil Screening Levels				EPA Regional Soil Screening Levels			
	Sample Depth (ft)	0	3	3	12.5	9	6	3	0	0	3	6	9	12.5	0	3	6	9	12.5	3	0	3	6	9	12.5	12.5	Residential Soil (mg/kg)	Industrial/ Occupational Soil (mg/kg)	Construction Worker Soil (mg/kg)	Risk-based SSL for a DAF of 1 (mg/kg)	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Groundwater Protection Risk-based (mg/kg)	Groundwater Protection MCL-based (mg/kg)
	Sample Date	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990	6/28/1990								
2-Chloronaphthalene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.26E+03	9.08E+04	2.48E+04	1.14E+01	6.30E+03	8.20E+04	1.80E+01	NA
2-Chlorophenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.91E+02	5.68E+03	1.55E+03	1.16E-01	3.90E+02	5.10E+03	2.00E-01	NA
2-Methylnaphthalene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**290**	<5.0	**5**	<5.0	<5.0	**1400**	<5.0	<5.0	<5.0	<5.0	**56**	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	3.10E+02	4.10E+03	9.00E-01	NA
o-Cresol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**16**	<5.0	<5.0	<5.0	<5.0	<100	**34**	**19**	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**16**	NA	NA	NA	NA	3.10E+03	3.10E+04	2.00E+00	NA
2- Nitroaniline	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	1.80E+02	1.80E+03	3.30E-02	NA
2-Nitrophenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
3,3' -Dichlorobenzidine	ug/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<200	<10	<10	<10	<10	<20	<10	<10	<10	<10	1.08E+01	4.26E+01	3.64E+02	7.40E-03	1.10E+00	3.80E+00	2.30E-03	NA
m & p-Cresol(s)	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**26**	<5.0	<5.0	<5.0	<5.0	**120**	**68**	**34**	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**28**	NA	NA	NA	NA	3.10E+02	3.10E+03	1.90E-01	NA
3- Nitroaniline	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-o-cresol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl Phenyl ether	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methvlphenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	2.40E+00	8.60E+00	1.20E-04	NA
4-Chlorophenyl	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
4- Nitroaniline	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	2.40E+01	8.60E+01	1.00E-03	NA
4-Nitrophenol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.44E+03	3.67E+04	1.86E+04	1.69E+01	3.40E+03	3.30E+04	2.70E+01	NA
Acenaphthylene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Aniline	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	8.50E+01	3.00E+02	3.40E-03	NA
Anthracene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.72E+04	1.83E+05	6.68E+04	2.71E+02	1.70E+04	1.70E+05	4.50E+02	NA
Benzo(a)anthracene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E+00	2.34E+01	2.13E+02	7.83E-02	1.50E-01	2.10E+00	1.40E-02	NA
Benzo(a)pyrene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E-01	2.34E+00	2.13E+01	2.60E-02	1.50E-02	2.10E-01	4.60E-03	3.10E-01
Benzo(b)fluoranthene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E+00	2.34E+01	2.13E+02	2.65E-01	1.50E-01	2.10E+00	4.70E-02	NA
Benzo(g,h,i)perylene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E+01	2.34E+02	2.06E+03	2.60E+00	1.50E+00	2.10E+01	4.60E-01	NA
Benzoic acid	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	2.40E+05	2.50E+06	3.30E+01	NA
Benzyl alcohol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	3.10E+04	3.10E+05	4.20E+00	NA
bis(2-Chloroethoxy)-methane	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	1.80E+02	1.80E+03	2.30E-02	NA
bis(2-Chloroethy1) ether	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	2.68E+00	1.42E+01	7.78E+01	2.63E-05	1.90E-01	9.00E-01	2.70E-06	NA
bis(2-Chloroisopropyl)-ether	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	9.15E+01	4.54E+02	3.10E+03	2.33E-03	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.47E+02	1.37E+03	4.76E+03	8.62E+00	3.50E+01	1.20E+02	1.60E+00	2.00E+00
Butyl benzyl phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	2.60E+02	9.10E+02	6.70E-01	NA
Chrysene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E+02	2.34E+03	2.06E+04	7.99E+00	1.50E+01	2.10E+02	1.40E+00	NA
Dibenz(a,h)anthracene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E-01	2.34E+00	2.13E+01	8.46E-02	1.50E-02	2.10E+02	1.50E-02	NA
Diethyl phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	4.89E+04	5.47E+05	1.91E+05	9.66E+00	4.90E+04	4.90E+05	1.30E+01	NA
Dimethyl phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.11E+05	6.84E+06	2.38E+06	8.06E+01	NA	NA	NA	NA
Di-n-butyl phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.11E+03	6.84E+04	2.38E+04	6.97E+00	NA	NA	NA	NA
Di-n-octyl phthalate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	2.29E+03	2.44E+04	8.91E+03	1.22E+02	2.30E+03	2.20E+04	2.10E+02	NA
Fluorene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	13	<5.0	<5.0	<5.0	<5.0	**100**	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	2.29E+03	2.44E+04	8.91E+03	2.03E+01	2.30E+03	2.20E+04	3.30E+01	NA
Hexachlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.04E+00	1.20E+01	1.03E+02	3.98E-03	3.00E-01	1.10E+00	2.90E-04	7.00E-03
Hexachlorobutadiene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.20E+00	2.20E+01	1.90E-03	NA
Hexachlorocyclopentadiene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	3.67E+02	4.10E+03	8.11E+02	5.27E-01	3.70E+02	3.70E+03	8.00E-01	1.80E-01
Hexachloroethane	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	4.28E+01	4.79E+02	1.67E+02	8.18E-03	3.50E+01	1.20E+02	3.20E-03	NA
Indeno(l,2,3-cd)pyrene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.48E+00	2.34E+01	2.13E+02	8.63E-01	1.50E-01	2.10E+00	1.60E-01	NA
Isophorone	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	5.12E+03	1.37E+05	4.75E+04	1.92E-01	5.10E+02	1.80E+03	2.20E-02	NA
Naphthalene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**54**	<5.0	<5.0	<5.0	<5.0	**340**	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	4.30E+01	2.41E+02	1.58E+02	3.57E-03	3.90E+00	2.00E+01	5.50E-04	NA
Nitrobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	5.35E+01	3.00E+02	3.32E+02	6.24E-04	4.40E+00	2.20E+01	7.10E-05	NA
N-Nitroso-di-n-propylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.90E-02	2.50E-01	1.10E-05	NA
N-Nitrosodimethylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	9.93E+02	3.91E+03	3.36E+04	5.65E-01	9.90E+01	3.50E+02	1.70E-01	NA
Pentachlorophenol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	8.94E+00	3.00E+01	3.10E+02	1.28E-02	3.00E+00	9.00E+00	3.90E-03	7.00E-03
Phenanthrene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	28	<5.0	<5.0	<5.0	<5.0	1.83E+03	2.05E+04	7.15E+03	2.86E+01	NA	NA	NA	NA
Phenol	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	**71**	**32**	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**28**	1.83E+04	2.05E+05	6.88E+04	4.97E+00	1.80E+04	1.80E+05	8.10E+00	NA
Pyrene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	1.72E+03	1.83E+04	6.68E+03	8.94E+01	1.70E+03	1.70E+04	1.50E+02	NA
1- Naphthylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	7.30E+01	3.67E+02	6.87E+01	9.13E-03	NA	NA	NA	NA
1,2-Diphenylhydrazine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.7E-01	2.9E+00	2.5E-04	NA
1,3- Dinitrobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	6.2E+00	8.2E+01	1.8E-03	NA
1-Chloronaphthalene	ug/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.26E+03	9.08E+04	2.48E+04	1.14E+01	NA	NA	NA	NA
2- Naphthylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	3.0E-01	1.3E+00	2.0E-04	NA
2,3,4,6-Tetrachlorophenol	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	1.8E+03	2.5E+04	1.5E+00	NA
2,6-Dinitrotoluene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.11E+01	6.84E+02	2.38E+02	3.85E-02	NA	NA	NA	NA
2-Picoline	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
3-Methylcholanthrene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	5.4E-03	1.0E-01	2.2E-03	NA
7,12-Dimethylbenz(a)-anthracene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	4.5E-04	8.5E-03	9.9E-05	NA
a, a-Dimethylphenethylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	7.82E+03	1.14E+05	3.10E+04	9.17E-01	NA	NA	NA	NA
Diphenylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	1.5E+03	2.1E+04	5.8E-01	NA
Ethyl methanesulfonate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	NA	NA	NA	NA
Methyl methanesulfonate	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	5.4E+00	2.3E+01	1.6E-04	NA
N-Nitroso-di-n-butylamine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	6.89E-01	2.92E+00	2.19E+01	3.78E-05	NA	NA	NA	NA
N-Nitrosodiphenyl amine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	9.93E+02	3.91E+03	3.36E+04	5.65E-01	NA	NA	NA	NA
N-Nitrosopiperidine	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	2.5E-01	1.1E+00	1.4E-05	NA
p-Dimethylaminoazobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	NA	NA	NA	1.2E-01	5.0E-01	2.1E-05	NA
Pentachlorobenzene	ug/kg	<5	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<100	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	4.89E+01	5.47E+02	1.91E+02	1.68E-01	NA	NA	NA	NA
Pentachloronitrobenzene	ug/kg	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50	<25	<25	<25	<25	<500	<25	<25	<25	<25	<50	<25	<25	<25	<25	NA	NA	NA	NA	2.0E+00	8.9E+00	1.4E-03	NA

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

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

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

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

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

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

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

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

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

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

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

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

(1) Recorded data was 78.6 and is considered to be an error.
(2) Depth to groundwate estimated from land surface

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- No screening level available

Bolded value represents applicable screeening level for comparion to site concentrations

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

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

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

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

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-1 (2-4')		SWMU 10-1 (4-6')		SWMU 10-1 (18-20')		SWMU 10-2 (0-2')		SWMU 10-2 (2-4')		SWMU 10-3 (2-4')		SWMU 10-3 (6-8')		SWMU 10-3 (18-20')		SWMU 10-4 (0-2')		SWMU 10-4 (2-4')		SWMU 10-4 (6-8')		SWMU 10-4 (18-20')		SWMU 10-5 (0-2')	
							1504C87-001		1504C87-002		1504C87-003		1505223-003*		1505223-004*		1504C87-004		1504C87-005		1504C87-006		1505004-001		1505004-002		1505004-003		1505004-004		1505003-001**	
							4/28/2015		4/28/2015		4/28/2015		5/4/2015		5/4/2015		4/28/2015		4/28/2015		4/28/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015	
Metals (mg/kg)																																
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	< 1.5756	u	1.9	J	1.5	J	< 1.5365	u	1.7	J	< 1.5281	u	< 3.1112	u	< 1.5824	u	< 1.5131	u	< 1.6799	u	< 1.5535	u	< 1.5096	u	< 1.5344	u
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	0.97	J	1.7	J	1.7	J	1.8	J	1.7	J	2.3	J	2.6	J	2.1	J	1.4	J	1.9	J	1.2	J	1.9	J	2.6	J
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	200	v	130	v	170	v	390	v	810	v	280	v	2900	v	750	v	460	v	390	v	140	v	230	v	500	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	1.1	v	1.1	v	1.1	v	0.91	v	0.98	v	0.88	v	0.92	v	1.1	v	0.71	v	0.98	v	0.84	v	1	v	0.99	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	< 0.0333	u	< 0.0353	u	< 0.0324	u	< 0.0324	u	< 0.0318	u	< 0.0323	u	< 0.0657	u	< 0.0334	u	< 0.0319	u	< 0.0355	u	< 0.0328	u	< 0.0319	u	< 0.0324	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	10	v	10	v	16	v	11	v	11	v	17	v	29	v	14	v	14	v	9.9	v	7.2	v	15	v	54	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	9.68E-02	(8)	< 2.4772	u	< 2.5306	u	< 2.3553	u	<1	u	<1	u	< 2.3677	u	< 2.4762	u	< 2.4156	u	< 2.2587	u	< 2.5279	u	< 2.3823	u	< 2.2991	u	<1.0	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	5.2	v	5.4	v	7	v	4.6	v	5.1	v	5	v	6.4	v	8.8	v	3.8	v	4.8	v	4	v	7.4	v	6.7	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	< 0.3097	u	< 0.3163	u	< 0.2944	u	< 0.2974	u	< 0.2865	u	< 0.296	u	< 0.3095	u	< 0.3019	u	< 0.2823	u	< 0.316	u	< 0.2978	u	< 0.2874	u	< 0.2973	u
Iron	5.50E+04	(2)	8.20E+05	(6)	7.00E+03	(9)	16000	v	17000	v	23000	v	15000	v	17000	v	15000	v	13000	v	22000	v	10000	v	14000	v	12000	v	21000	v	18000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	3.2	v	3.2	v	2	v	3.1	v	2.3	v	3.6	v	5.6	v	1.9	v	3.8	v	3.5	v	2.2	v	1.7	v	4.9	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	5.60E+02	(9)	300	v	290	v	480	v	700	v	360	v	820	v	1000	v	1200	v	440	v	310	v	270	v	770	v	870	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	0.0066	J	0.0063	J	0.0036	J	0.014	J	0.0062	J	0.1	v	0.087	v	0.0049	J	0.034	J	0.0082	J	0.017	J	0.004	J	0.53	v
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	9.1	v	9.6	v	16	v	9.2	v	8.9	v	8.9	v	10	v	16	v	6.5	v	8.3	v	6.8	v	16	v	14	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E+01	(8)	< 1.8348	u	< 1.9497	u	< 1.7891	u	< 1.7892	u	< 1.7549	u	< 1.7794	u	< 3.6229	u	< 1.8427	u	< 1.762	u	< 1.9562	u	< 1.809	u	< 1.7578	u	< 1.7868	u
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	< 0.0357	u	< 0.0379	u	< 0.0348	u	< 0.0348	u	< 0.0341	u	< 0.0346	u	< 0.0704	u	< 0.0358	u	< 0.0342	u	< 0.038	u	< 0.0352	u	< 0.0342	u	< 0.0347	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	20	v	18	v	17	v	21	v	22	v	22	v	23	v	16	v	17	v	20	v	15	v	22	v	26	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	17	v	16	v	22	v	18	v	17	v	25	v	35	v	27	v	29	v	16	v	13	v	22	v	150	v
Volatiles (mg/kg)																																
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	< 0.0028	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0027	u	< 0.0002	u	< 0.0003	u	< 0.0025	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	< 0.0052	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.005	u	< 0.0002	u	< 0.0003	u	< 0.0047	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	< 0.0042	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.004	u	< 0.0003	u	< 0.0004	u	< 0.0038	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	< 0.0041	u	< 0.0017	u	< 0.002	u	< 0.002	u	< 0.0017	u	< 0.0015	u	< 0.0016	u	< 0.0022	u	< 0.0019	u	< 0.0039	u	< 0.0015	u	< 0.0019	u	< 0.0037	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	< 0.0138	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0131	u	< 0.0004	u	< 0.0004	u	< 0.0124	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	< 0.0024	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0023	u	< 0.0003	u	< 0.0003	u	< 0.0021	u
1,1-Dichloropropene	-	-	-	-	-	-	< 0.0051	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0049	u	< 0.0003	u	< 0.0003	u	< 0.0046	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	< 0.0074	u	< 0.0006	u	< 0.0007	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.007	u	< 0.0006	u	< 0.0007	u	< 0.0066	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	< 0.0058	u	< 0.0006	u	< 0.0007	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.0055	u	< 0.0005	u	< 0.0007	u	< 0.0052	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.00636	u	< 0.00064	u	< 0.00074	u	< 0.00074	u	< 0.00063	u	< 0.00055	u	< 0.00061	u	< 0.00081	u	< 0.00072	u	< 0.00603	u	< 0.00057	u	< 0.00069	u	< 0.00573	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	0.0061	J	0.000619	J	0.00162	J	0.000938	J	0.000663	J	< 0.0004	u	0.000564	J	0.00184	J	0.00077	J	< 0.0016	u	0.000406	J	0.00277	v	0.063	v
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	< 0.0059	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0056	u	< 0.0005	u	< 0.0005	u	< 0.0053	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	< 0.0027	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0026	u	< 0.0002	u	< 0.0002	u	< 0.0025	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.00208	u	< 0.00038	u	< 0.00044	u	< 0.00044	u	< 0.00037	u	< 0.00033	u	< 0.00036	u	< 0.00048	u	< 0.00042	u	< 0.00197	u	< 0.00034	u	< 0.00041	u	< 0.00187	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	< 0.0138	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0131	u	< 0.0004	u	< 0.0005	u	< 0.0124	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	< 0.0019	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0005	u	< 0.0004	u	< 0.0018	u	< 0.0003	u	< 0.0004	u	< 0.0017	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	< 0.0023	u	0.000318	J	0.000993	J	< 0.0003	u	< 0.0003	u	< 0.0003	u	0.000351	J	0.00123	J	0.000347	J	0.11	v	< 0.0003	u	0.00184	J	0.041	v
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.00406	u	< 0.00029	u	< 0.00033	u	< 0.00033	u	< 0.00028	u	< 0.00025	u	< 0.00027	u	< 0.00036	u	< 0.00032	u	< 0.00385	u	< 0.00025	u	< 0.00031	u	< 0.00365	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	< 0.0048	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0045	u	< 0.0002	u	< 0.0003	u	< 0.0043	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.00429	u	< 0.00026	u	< 0.00031	u	< 0.00031	u	< 0.00026	u	< 0.00023	u	< 0.00025	u	< 0.00034	u	< 0.00029	u	< 0.00407	u	< 0.00024	u	< 0.00029	u	< 0.00386	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.02069	u	< 0.00067	u	< 0.00077	u	< 0.00078	u	< 0.00066	u	< 0.00058	u	< 0.00064	u	< 0.00085	u	< 0.00075	u	2.9	v	< 0.0006	u	< 0.00072	u	0.51	v
2,2-Dichloropropane	-	-	-	-	-	-	< 0.005	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0048	u	< 0.0003	u	< 0.0003	u	< 0.0045	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	< 0.0222	u	0.00257	J	0.00156	J	0.0038	J	0.00283	J	0.00273	J	0.00136	J	0.00151	J	0.00407	J	< 0.021	u	0.00153	J	< 0.0006	u	< 0.02	u
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	< 0.0039	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0037	u	< 0.0003	u	< 0.0004	u	< 0.0035	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	< 0.0085	u	< 0.0004	u	< 0.0004	u	0.000788	J	0.000672	J	0.000656	J	0.000588	J	0.000748	J	0.000886	J	< 0.008	u	0.000559	J	< 0.0004	u	< 0.0076	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.02268	u	< 0.00067	u	< 0.00077	u	< 0.00077	u	< 0.00066	u	< 0.00058	u	< 0.00063	u	< 0.00084	u	< 0.00075	u	0.69	v	< 0.00059	u	< 0.00072	u	0.53	v
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	4.80E+00	(9)	< 0.0026	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0025	u	< 0.0003	u	< 0.0004	u	< 0.0023	u
4-Isopropyltoluene	-	-	-	-	-	-	< 0.0025	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.0023	u	< 0.0006	u	< 0.0007	u	0.0061	J
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	< 0.006	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0057	u	< 0.0006	u	< 0.0008	u	< 0.0054	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	0.043	J	0.00926	v	0.00324	J	0.0222	v	0.0199	v	0.0201	v	0.00534	J	0.00158	J	0.0237	v	< 0.0244	u	0.00619	J	0.0018	J	< 0.0232	u
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	< 0.0051	u	0.00211	v	0.0146	v	0.00171	J	0.00203	v	0.000872	J	0.00319	v	0.0141	v	0.00118	J	< 0.0049	u	0.0019	v	0.0204	v	0.014	J
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	< 0.0026	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0024	u	< 0.0004	u	< 0.0005	u	< 0.0023	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	< 0.0028	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0027	u	< 0.0002	u	< 0.0003	u	< 0.0025	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	< 0.0028	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0026	u	< 0.0004	u	< 0.0005	u	< 0.0025	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	< 0.0067	u	< 0.001	u	< 0.0012	u	< 0.0012	u	< 0.001	u	< 0.0009	u	< 0.001	u	< 0.0013	u	< 0.0011	u	< 0.0063	u	< 0.0009	u	< 0.0011	u	< 0.006	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	< 0.0248	u	< 0.0008	u	< 0.0009	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0007	u	< 0.001	u	< 0.0009	u	< 0.0236	u	< 0.0007	u	< 0.0008	u	< 0.0224	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	< 0.0034	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0032	u	< 0.0003	u	< 0.0003	u	< 0.003	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	< 0.0027	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0025	u	< 0.0002	u	< 0.0002	u	< 0.0024	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	< 0.0267	u	< 0.0017	u	< 0.002	u	< 0.002	u	< 0.0017	u	< 0.0015	u	< 0.0016	u	< 0.0022	u	< 0.0019	u	< 0.0253	u	< 0.0015	u	< 0.0019	u	< 0.024	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	< 0.0036	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0034	u	< 0.0003	u	< 0.0004	u	< 0.0032	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	< 0.004	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0038	u	< 0.0002	u	< 0.0002	u	< 0.0036	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	< 0.0044	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0041	u	< 0.0004	u	< 0.0005	u	< 0.0039	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0024	u	< 0.0017	u	< 0.002	u	< 0.002	u	< 0.0017	u	< 0.0015	u	< 0.0016	u	< 0.0022	u	< 0.0019	u	< 0.0023	u	< 0.0015	u	< 0.0019	u	< 0.0022	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	< 0.0026	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0025	u	< 0.0002	u	< 0.0002	u	< 0.0023	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-1 (2-4')		SWMU 10-1 (4-6')		SWMU 10-1 (18-20')		SWMU 10-2 (0-2')		SWMU 10-2 (2-4')		SWMU 10-3 (2-4')		SWMU 10-3 (6-8')		SWMU 10-3 (18-20')		SWMU 10-4 (0-2')		SWMU 10-4 (2-4')		SWMU 10-4 (6-8')		SWMU 10-4 (18-20')		SWMU 10-5 (0-2')	
							1504C87-001		1504C87-002		1504C87-003		1505223-003*		1505223-004*		1504C87-004		1504C87-005		1504C87-006		1505004-001		1505004-002		1505004-003		1505004-004		1505003-001**	
							4/28/2015		4/28/2015		4/28/2015		5/4/2015		5/4/2015		4/28/2015		4/28/2015		4/28/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015	
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	< 0.0036	u	< 0.001	u	< 0.0011	u	< 0.0011	u	< 0.001	u	< 0.0008	u	< 0.0009	u	< 0.0012	u	< 0.0011	u	< 0.0034	u	< 0.0009	u	< 0.0011	u	< 0.0033	u
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	< 0.0087	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0082	u	< 0.0006	u	< 0.0008	u	< 0.0078	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	< 0.0032	u	0.0318	v	0.00192	J	0.000618	J	0.000468	J	0.000313	J	0.0008	J	0.00231	v	0.000703	J	0.0041	J	0.000421	J	0.00291	v	0.016	J
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.00479	u	< 0.00034	u	< 0.0004	u	< 0.0004	u	< 0.00034	u	< 0.0003	u	< 0.00032	u	< 0.00043	u	< 0.00038	u	< 0.00454	u	< 0.0003	u	< 0.00037	u	< 0.00431	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	< 0.0029	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0028	u	< 0.0004	u	0.000482	J	< 0.0026	u
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	< 0.0049	u	0.00669	v	< 0.0008	u	< 0.0008	u	0.00283	v	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0046	u	0.00139	J	< 0.0008	u	< 0.0044	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	< 0.0138	u	0.000619	J	0.000566	J	0.000748	J	< 0.0004	u	0.000387	J	0.000547	J	0.00077	J	0.000606	J	< 0.0131	u	0.000529	J	0.000612	J	< 0.0124	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.00821	u	0.000877	J	< 0.00064	u	< 0.00065	u	< 0.00055	u	< 0.00048	u	< 0.00053	u	< 0.0007	u	< 0.00062	u	< 0.00778	u	< 0.0005	u	0.000742	J	0.12	v
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	< 0.003	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0028	u	< 0.0006	u	< 0.0008	u	0.0094	J
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	< 0.0026	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0024	u	< 0.0003	u	0.00051	J	0.0051	J
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	< 0.0049	u	0.000593	J	0.000715	J	0.000658	J	< 0.0004	u	< 0.0004	u	0.000555	J	0.000781	J	0.000645	J	< 0.0047	u	0.000667	J	0.000714	J	< 0.0044	u
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	< 0.0063	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.006	u	< 0.0003	u	< 0.0003	u	< 0.0057	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	< 0.004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0037	u	< 0.0002	u	< 0.0003	u	< 0.0036	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	< 0.003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0028	u	< 0.0003	u	< 0.0004	u	< 0.0027	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	< 0.0041	u	0.00253	v	0.00836	v	0.00191	J	0.00155	J	0.00116	J	0.00301	v	0.01	v	0.00263	v	< 0.0039	u	0.00162	v	0.0127	v	0.01	J
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	< 0.0022	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0021	u	< 0.0002	u	< 0.0003	u	< 0.002	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0062	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0059	u	< 0.0002	u	< 0.0002	u	< 0.0056	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	< 0.0034	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0032	u	< 0.0003	u	< 0.0004	u	< 0.003	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	< 0.0104	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0099	u	< 0.0003	u	< 0.0004	u	< 0.0094	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	< 0.0138	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0131	u	< 0.0002	u	< 0.0002	u	< 0.0124	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	< 0.0096	u	0.197	v	0.00647	v	0.00206	v	0.00143	J	0.00108	J	0.00181	v	0.00707	v	0.00182	J	< 0.0091	u	0.00118	J	0.00975	v	0.14	v
Semi-volatiles (mg/kg)																																
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.1259	u	< 0.1289	u	< 0.1198	u	< 0.1209	u	< 0.1175	u	< 0.2426	u	< 0.1259	u	< 0.1232	u	< 0.1146	u	< 0.1201	u	< 0.1177	u	< 0.1164	u	< 1.2319	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.1176	u	< 0.1204	u	< 0.1119	u	< 0.113	u	< 0.1098	u	< 0.2266	u	< 0.1176	u	< 0.1151	u	< 0.1071	u	< 0.1122	u	< 0.11	u	< 0.1088	u	< 1.1511	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.1092	u	< 0.1118	u	< 0.1039	u	< 0.1049	u	< 0.102	u	< 0.2105	u	< 0.1092	u	< 0.1069	u	< 0.0994	u	< 0.1042	u	< 0.1021	u	< 0.101	u	< 1.0688	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.1286	u	< 0.1317	u	< 0.1224	u	< 0.1236	u	< 0.1201	u	< 0.2478	u	< 0.1287	u	< 0.1258	u	< 0.1171	u	< 0.1227	u	< 0.1203	u	< 0.119	u	< 1.2587	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.114	u	< 0.1167	u	< 0.1085	u	< 0.1095	u	< 0.1064	u	< 0.2196	u	< 0.114	u	< 0.1115	u	< 0.1038	u	3.6	v	< 0.1066	u	< 0.1054	u	< 1.1155	u
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	< 0.1433	u	< 0.1467	u	< 0.1364	u	< 0.1377	u	< 0.1338	u	< 0.2761	u	< 0.1433	u	< 0.1402	u	< 0.1304	u	< 0.1367	u	< 0.134	u	< 0.1326	u	< 1.4024	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	< 0.1422	u	< 0.1456	u	< 0.1353	u	< 0.1366	u	< 0.1328	u	< 0.2739	u	< 0.1422	u	< 0.1391	u	< 0.1294	u	< 0.1356	u	< 0.1329	u	< 0.1315	u	< 1.3913	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	< 0.123	u	< 0.1259	u	< 0.117	u	< 0.1181	u	< 0.1148	u	< 0.237	u	< 0.123	u	< 0.1203	u	< 0.1119	u	< 0.1173	u	< 0.115	u	< 0.1137	u	< 1.2034	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	< 0.0967	u	< 0.099	u	< 0.092	u	< 0.0929	u	< 0.0903	u	< 0.1863	u	< 0.0967	u	< 0.0946	u	< 0.088	u	< 0.0922	u	< 0.0904	u	< 0.0894	u	< 0.9459	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	< 0.0511	u	< 0.0523	u	< 0.0486	u	< 0.0491	u	< 0.0477	u	< 0.0985	u	< 0.0511	u	< 0.05	u	< 0.0465	u	< 0.0487	u	< 0.0478	u	< 0.0473	u	< 0.5	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	< 0.11	u	< 0.1126	u	< 0.1047	u	< 0.1057	u	< 0.1027	u	< 0.212	u	< 0.11	u	< 0.1076	u	< 0.1001	u	< 0.1049	u	< 0.1029	u	< 0.1018	u	< 1.0766	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	< 0.1367	u	< 0.14	u	< 0.1301	u	< 0.1313	u	< 0.1276	u	< 0.2634	u	< 0.1367	u	< 0.1337	u	< 0.1244	u	< 0.1304	u	< 0.1278	u	< 0.1264	u	< 1.3376	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	< 0.1317	u	< 0.1349	u	< 0.1254	u	< 0.1266	u	< 0.123	u	< 0.2539	u	< 0.1318	u	< 0.1289	u	< 0.1199	u	< 0.1256	u	< 0.1232	u	< 0.1219	u	< 1.2893	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	< 0.1148	u	< 0.1175	u	< 0.1092	u	< 0.1102	u	< 0.1072	u	< 0.2211	u	< 0.1148	u	< 0.1123	u	< 0.1045	u	< 0.1094	u	< 0.1073	u	< 0.1062	u	< 1.123	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.1125	u	< 0.1152	u	< 0.1071	u	< 0.1081	u	< 0.1051	u	< 0.2168	u	< 0.1126	u	< 0.1101	u	< 0.1024	u	0.42	v	< 0.1052	u	< 0.1041	u	< 1.1013	u
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	< 0.1233	u	< 0.1262	u	< 0.1173	u	< 0.1184	u	< 0.1151	u	< 0.2375	u	< 0.1233	u	< 0.1206	u	< 0.1122	u	< 0.1176	u	< 0.1153	u	< 0.114	u	< 1.2064	u
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	< 0.1399	u	< 0.1433	u	< 0.1332	u	< 0.1344	u	< 0.1307	u	< 0.2696	u	< 0.14	u	< 0.1369	u	< 0.1274	u	< 0.1334	u	< 0.1308	u	< 0.1294	u	< 1.3693	u
2-Nitrophenol	-	-	-	-	-	-	< 0.1105	u	< 0.1132	u	< 0.1052	u	< 0.1062	u	< 0.1032	u	< 0.213	u	< 0.1106	u	< 0.1081	u	< 0.1006	u	< 0.1054	u	< 0.1033	u	< 0.1022	u	< 1.0816	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	< 0.0947	u	< 0.097	u	< 0.0901	u	< 0.091	u	< 0.0884	u	< 0.1825	u	< 0.0947	u	< 0.0926	u	< 0.0862	u	< 0.0903	u	< 0.0885	u	< 0.0876	u	< 0.9267	u
3+4-Methylphenol	-	-	-	-	-	-	< 0.1274	u	< 0.1305	u	< 0.1213	u	< 0.1224	u	< 0.119	u	< 0.2456	u	< 0.1275	u	< 0.1247	u	< 0.116	u	< 0.1215	u	< 0.1192	u	< 0.1179	u	< 1.2472	u
3-Nitroaniline	-	-	-	-	-	-	< 0.1185	u	< 0.1213	u	< 0.1128	u	< 0.1138	u	< 0.1106	u	< 0.2283	u	< 0.1185	u	< 0.1159	u	< 0.1078	u	< 0.113	u	< 0.1108	u	< 0.1096	u	< 1.1595	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	< 0.0669	u	< 0.0685	u	< 0.0636	u	< 0.0642	u	< 0.0624	u	< 0.1288	u	< 0.0669	u	< 0.0654	u	< 0.0609	u	< 0.0638	u	< 0.0625	u	< 0.0618	u	< 0.6543	u
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 0.1305	u	< 0.1336	u	< 0.1242	u	< 0.1253	u	< 0.1218	u	< 0.2514	u	< 0.1305	u	< 0.1276	u	< 0.1188	u	< 0.1244	u	< 0.122	u	< 0.1207	u	< 1.2768	u
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 0.1224	u	< 0.1254	u	< 0.1165	u	< 0.1176	u	< 0.1143	u	< 0.2359	u	< 0.1225	u	< 0.1198	u	< 0.1115	u	< 0.1168	u	< 0.1145	u	< 0.1133	u	< 1.1982	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	< 0.1137	u	< 0.1164	u	< 0.1082	u	< 0.1093	u	< 0.1062	u	< 0.2191	u	< 0.1138	u	< 0.1113	u	< 0.1035	u	< 0.1085	u	< 0.1063	u	< 0.1052	u	< 1.1129	u
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 0.1831	u	< 0.1875	u	< 0.1743	u	< 0.1759	u	< 0.171	u	< 0.3528	u	< 0.1832	u	< 0.1791	u	< 0.1667	u	< 0.1746	u	< 0.1712	u	< 0.1694	u	< 1.792	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	< 0.1105	u	< 0.1131	u	< 0.1051	u	< 0.1061	u	< 0.1031	u	< 0.2128	u	< 0.1105	u	< 0.1081	u	< 0.1005	u	< 0.1053	u	< 0.1033	u	< 0.1022	u	< 1.0809	u
4-Nitrophenol	-	-	-	-	-	-	< 0.1059	u	< 0.1085	u	< 0.1008	u	< 0.1018	u	< 0.0989	u	< 0.2042	u	< 0.106	u	< 0.1037	u	< 0.0964	u	< 0.101	u	< 0.0991	u	< 0.098	u	< 1.0368	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	< 0.1498	u	< 0.1534	u	< 0.1426	u	< 0.144	u	< 0.1399	u	< 0.2887	u	< 0.1499	u	< 0.1466	u	< 0.1364	u	< 0.1429	u	< 0.1401	u	< 0.1386	u	< 1.4664	u
Acenaphthylene	-	-	-	-	-	-	< 0.1246	u	< 0.1276	u	< 0.1186	u	< 0.1197	u	< 0.1163	u	< 0.24	u	< 0.1246	u	< 0.1219	u	< 0.1134	u	< 0.1188	u	< 0.1165	u	< 0.1152	u	< 1.2191	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	< 0.107	u	< 0.1096	u	< 0.1019	u	< 0.1028	u	< 0.0999	u	< 0.2062	u	< 0.1071	u	< 0.1047	u	< 0.0974	u	< 0.1021	u	< 0.1001	u	< 0.099	u	< 1.0475	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	< 0.1045	u	< 0.107	u	< 0.0994	u	< 0.1003	u	< 0.0975	u	< 0.2013	u	< 0.1045	u	< 0.1022	u	< 0.0951	u	< 0.0996	u	< 0.0977	u	< 0.0966	u	< 1.0222	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	< 0.1379	u	< 0.1411	u	< 0.1312	u	< 0.1324	u	< 0.1287	u	< 0.2656	u	< 0.1379	u	< 0.1349	u	< 0.1255	u	< 0.1315	u	< 0.1289	u	< 0.1275	u	< 1.349	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	< 0.0966	u	< 0.099	u	< 0.092	u	< 0.0928	u	< 0.0902	u	< 0.1862	u	< 0.0967	u	< 0.0946	u	< 0.088	u	< 0.0922	u	< 0.0904	u	< 0.0894	u	< 0.9458	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	< 0.138	u	< 0.1413	u	< 0.1313	u	< 0.1326	u	< 0.1289	u	< 0.2659	u	< 0.138	u	< 0.135	u	< 0.1256	u	< 0.1316	u	< 0.129	u	< 0.1277	u	< 1.3505	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	< 0.1168	u	< 0.1196	u	< 0.1111	u	< 0.1122	u	< 0.109	u	< 0.225	u	< 0.1168	u	< 0.1142	u	< 0.1063	u	< 0.1114	u	< 0.1092	u	< 0.108	u	< 1.1427	u
Benzo(g,h,i)perylene	-	-	-	-	-	-	< 0.1399	u	< 0.1433	u	< 0.1332	u	< 0.1344	u	< 0.1307	u	< 0.2696	u	< 0.14	u	< 0.1369	u	< 0.1274	u	< 0.1335	u	< 0.1308	u	< 0.1294	u	< 1.3694	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	< 0.139	u	< 0.1423	u	< 0.1323	u	< 0.1335	u	< 0.1298	u	< 0.2678	u	< 0.139	u	< 0.136	u	< 0.1265	u	< 0.1325	u	< 0.1299	u	< 0.1285	u	< 1.36	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	< 0.0701	u	< 0.0717	u	< 0.0667	u	< 0.0673	u	< 0.0654	u	< 0.135	u	< 0.0701	u	< 0.0685	u	< 0.0638	u	< 0.0668	u	< 0.0655	u	< 0.0648	u	< 0.6857	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	< 0.1092	u	< 0.1118	u	< 0.104	u	< 0.1049	u	< 0.102	u	< 0.2105	u	< 0.1093	u	< 0.1069	u	< 0.0994	u	< 0.1042	u	< 0.1021	u	< 0.101	u	< 1.0689	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	< 0.1174	u	< 0.1202	u	< 0.1117	u	< 0.1127	u	< 0.1096	u	< 0.2262	u	< 0.1174	u	< 0.1148	u	< 0.1068	u	< 0.1119	u	< 0.1097	u	< 0.1086	u	< 1.1486	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	< 0.1215	u	< 0.1244	u	< 0.1156	u	< 0.1167	u	< 0.1135	u	< 0.2341	u	< 0.1215	u	< 0.1189	u	< 0.1106	u	< 0.1159	u	< 0.1136	u	< 0.1124	u	< 1.1891	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-1 (2-4')		SWMU 10-1 (4-6')		SWMU 10-1 (18-20')		SWMU 10-2 (0-2')		SWMU 10-2 (2-4')		SWMU 10-3 (2-4')		SWMU 10-3 (6-8')		SWMU 10-3 (18-20')		SWMU 10-4 (0-2')		SWMU 10-4 (2-4')		SWMU 10-4 (6-8')		SWMU 10-4 (18-20')		SWMU 10-5 (0-2')	
							1504C87-001		1504C87-002		1504C87-003		1505223-003*		1505223-004*		1504C87-004		1504C87-005		1504C87-006		1505004-001		1505004-002		1505004-003		1505004-004		1505003-001**	
							4/28/2015		4/28/2015		4/28/2015		5/4/2015		5/4/2015		4/28/2015		4/28/2015		4/28/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015	
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	< 0.0939	u	< 0.0962	u	< 0.0894	u	< 0.0902	u	< 0.0877	u	< 0.181	u	< 0.094	u	< 0.0919	u	< 0.0855	u	< 0.0896	u	< 0.0878	u	< 0.0869	u	< 0.9193	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	< 0.1382	u	< 0.1415	u	< 0.1315	u	< 0.1327	u	< 0.129	u	0.29	J	< 0.1382	u	< 0.1352	u	< 0.1258	u	< 0.1318	u	< 0.1292	u	< 0.1278	u	< 1.352	u
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	< 0.1501	u	< 0.1537	u	< 0.1429	u	< 0.1442	u	< 0.1402	u	< 0.2893	u	< 0.1502	u	< 0.1469	u	< 0.1367	u	< 0.1432	u	< 0.1404	u	< 0.1389	u	< 1.4691	u
Carbazole	-	-	-	-	-	-	< 0.1145	u	< 0.1173	u	< 0.109	u	< 0.11	u	< 0.1069	u	< 0.2207	u	< 0.1146	u	< 0.112	u	< 0.1043	u	< 0.1092	u	< 0.1071	u	< 0.1059	u	< 1.1208	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	< 0.1235	u	< 0.1264	u	< 0.1175	u	< 0.1186	u	< 0.1153	u	< 0.2379	u	< 0.1235	u	< 0.1208	u	< 0.1124	u	< 0.1178	u	< 0.1155	u	< 0.1142	u	< 1.2084	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	< 0.1332	u	< 0.1364	u	< 0.1268	u	< 0.128	u	< 0.1244	u	< 0.2567	u	< 0.1333	u	< 0.1303	u	< 0.1213	u	< 0.1271	u	< 0.1246	u	< 0.1232	u	< 1.3037	u
Dibenzofuran	-	-	-	-	-	-	< 0.1315	u	< 0.1347	u	< 0.1252	u	< 0.1263	u	< 0.1228	u	< 0.2534	u	< 0.1315	u	< 0.1287	u	< 0.1197	u	< 0.1254	u	< 0.123	u	< 0.1216	u	< 1.287	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	< 0.1396	u	< 0.1429	u	< 0.1328	u	< 0.1341	u	< 0.1303	u	< 0.2689	u	< 0.1396	u	< 0.1365	u	< 0.127	u	< 0.1331	u	< 0.1305	u	< 0.1291	u	< 1.3657	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	< 0.1132	u	< 0.1159	u	< 0.1077	u	< 0.1087	u	< 0.1057	u	< 0.2181	u	< 0.1132	u	< 0.1107	u	< 0.103	u	< 0.1079	u	< 0.1058	u	< 0.1047	u	< 1.1075	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	< 0.1391	u	< 0.1424	u	< 0.1324	u	< 0.1336	u	< 0.1299	u	< 0.268	u	< 0.1391	u	< 0.1361	u	< 0.1266	u	< 0.1326	u	< 0.13	u	< 0.1286	u	< 1.361	u
Di-n-octyl phthalate	-	-	-	-	-	-	< 0.1369	u	< 0.1402	u	< 0.1303	u	< 0.1315	u	< 0.1278	u	< 0.2638	u	< 0.1369	u	< 0.1339	u	< 0.1246	u	< 0.1306	u	< 0.128	u	< 0.1266	u	< 1.3397	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	< 0.1492	u	< 0.1528	u	< 0.142	u	< 0.1434	u	< 0.1393	u	< 0.2875	u	< 0.1493	u	< 0.146	u	< 0.1358	u	< 0.1423	u	< 0.1395	u	< 0.138	u	< 1.4603	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	< 0.1674	u	< 0.1714	u	< 0.1593	u	< 0.1608	u	< 0.1563	u	< 0.3226	u	< 0.1674	u	< 0.1638	u	< 0.1524	u	0.22	J	< 0.1565	u	< 0.1549	u	< 1.6383	u
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	< 0.1161	u	< 0.1188	u	< 0.1105	u	< 0.1115	u	< 0.1084	u	< 0.2236	u	< 0.1161	u	< 0.1135	u	< 0.1056	u	< 0.1107	u	< 0.1085	u	< 0.1074	u	< 1.1358	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.1217	u	< 0.1246	u	< 0.1158	u	< 0.1169	u	< 0.1136	u	< 0.2344	u	< 0.1217	u	< 0.119	u	< 0.1107	u	< 0.116	u	< 0.1138	u	< 0.1125	u	< 1.1906	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	< 0.0853	u	< 0.0873	u	< 0.0812	u	< 0.0819	u	< 0.0796	u	< 0.1644	u	< 0.0853	u	< 0.0834	u	< 0.0776	u	< 0.0813	u	< 0.0797	u	< 0.0789	u	< 0.8347	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	< 0.1095	u	< 0.1121	u	< 0.1042	u	< 0.1052	u	< 0.1022	u	< 0.2109	u	< 0.1095	u	< 0.1071	u	< 0.0996	u	< 0.1044	u	< 0.1023	u	< 0.1012	u	< 1.0712	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	< 0.1397	u	< 0.1431	u	< 0.133	u	< 0.1342	u	< 0.1305	u	< 0.2693	u	< 0.1398	u	< 0.1367	u	< 0.1272	u	< 0.1333	u	< 0.1307	u	< 0.1293	u	< 1.3676	u
Isophorone	5.61E+03	(1)	2.70E+04	(4)	4.22E+00	(8)	< 0.1311	u	< 0.1342	u	< 0.1248	u	< 0.126	u	< 0.1224	u	< 0.2526	u	< 0.1311	u	< 0.1283	u	< 0.1193	u	< 0.125	u	< 0.1226	u	< 0.1213	u	< 1.283	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.117	u	< 0.1198	u	< 0.1114	u	< 0.1124	u	< 0.1093	u	< 0.2255	u	< 0.117	u	< 0.1145	u	< 0.1065	u	< 0.1116	u	< 0.1094	u	< 0.1082	u	< 1.145	u
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	< 0.1266	u	< 0.1296	u	< 0.1205	u	< 0.1216	u	< 0.1182	u	< 0.244	u	< 0.1266	u	< 0.1239	u	< 0.1152	u	< 0.1207	u	< 0.1184	u	< 0.1171	u	< 1.239	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	< 0.1275	u	< 0.1305	u	< 0.1213	u	< 0.1224	u	< 0.119	u	< 0.2456	u	< 0.1275	u	< 0.1247	u	< 0.116	u	< 0.1216	u	< 0.1192	u	< 0.1179	u	< 1.2474	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	< 0.1101	u	< 0.1127	u	< 0.1048	u	< 0.1058	u	< 0.1028	u	< 0.2121	u	< 0.1101	u	< 0.1077	u	< 0.1002	u	< 0.105	u	< 0.1029	u	< 0.1018	u	< 1.0774	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	< 0.0768	u	< 0.0786	u	< 0.0731	u	< 0.0738	u	< 0.0717	u	< 0.1479	u	< 0.0768	u	< 0.0751	u	< 0.0699	u	< 0.0732	u	< 0.0718	u	< 0.071	u	< 0.7513	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	< 0.1286	u	< 0.1317	u	< 0.1224	u	< 0.1236	u	< 0.1201	u	< 0.2479	u	< 0.1287	u	< 0.1259	u	< 0.1171	u	0.8	v	< 0.1203	u	< 0.119	u	< 1.2589	u
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	< 0.1102	u	< 0.1128	u	< 0.1049	u	< 0.1059	u	< 0.1029	u	< 0.2124	u	< 0.1102	u	< 0.1078	u	< 0.1003	u	< 0.1051	u	< 0.103	u	< 0.1019	u	< 1.0785	u
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	< 0.1587	u	< 0.1625	u	< 0.151	u	< 0.1525	u	< 0.1482	u	< 0.3058	u	< 0.1587	u	< 0.1553	u	< 0.1445	u	< 0.1514	u	< 0.1484	u	< 0.1468	u	< 1.5531	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	< 0.1033	u	< 0.1058	u	< 0.0983	u	< 0.0993	u	< 0.0965	u	< 0.1991	u	< 0.1034	u	< 0.1011	u	< 0.0941	u	< 0.0985	u	< 0.0966	u	< 0.0956	u	< 1.0112	u
Total Petroleum Hydrocarbons (mg/kg)																																
Gasoline Range Organics (GRO)	-		-		-		< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	25	v	< 1	u	< 1	u	2.5	J
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-		93	v	< 5	u	< 6	u	24	v	< 6	u	84	v	42	v	< 5	u	160	v	**4100**	v	< 5	u	< 5	u	**7700**	v
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-		53	v	< 49	u	< 50	u	58	v	< 50	u	90	v	69	v	< 49	u	330	v	690	v	< 49	u	< 49	u	**5900**	v

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 461
(9) SoilGW Risk-based EPA DAF = 461
(10) SoilGW MCL-based EPA DAF = 461
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-5 (2-4')		SWMU 10-5 (4-6')		SWMU 10-5 (14-16')		SWMU 10-5 (22-24')		SWMU 10-6 (2-4')		SWMU 10-6 (10-12')		SWMU 10-7 (2-4')		SWMU 10-7 (4-6')		SWMU 10-7 (18-20')		SWMU 10-8 (2-4')		SWMU 10-8 (4-6')		SWMU 10-8 (18-20')	
							1505003-002		1505003-003		1505003-004		1505003-005		1505223-001		1505223-002		1505059-001		1505059-002		1505059-003		1505057-005		1505057-006		1505057-007	
							4/29/2015		4/29/2015		4/29/2015		4/29/2015		5/4/2015		5/4/2015		5/1/2015		5/1/2015		5/1/2015		4/30/2015		4/30/2015		4/30/2015	
Metals (mg/kg)																														
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	< 1.8521	u	< 2.5689	u	< 2.4884	u	< 1.4919	u	< 1.4559	u	1.9	J	< 1.5741	u	< 7.9126	u	< 7.6176	u	< 1.4477	u	< 1.4892	u	< 1.5077	u
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	1.9	J	1.5	J	1.5	J	1.6	J	1.8	J	2.1	J	2.1	J	2.2	J	< 1.6999	u	1.5	J	1.9	J	2	J
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	190	v	110	v	120	v	200	v	1000	v	550	v	220	v	200	v	250	v	830	v	130	v	470	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	1.4	v	1.8	v	1.8	v	0.99	v	1.1	v	1	v	0.85	v	0.92	v	1.1	v	0.65	v	0.83	v	0.99	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	< 0.0391	u	0.062	J	< 0.0525	u	< 0.0315	u	< 0.0307	u	< 0.033	u	< 0.0332	u	< 0.0334	u	< 0.0322	u	< 0.0306	u	< 0.0314	u	< 0.0318	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	5	v	< 0.1174	u	2.5	v	15	v	9.3	v	14	v	11	v	11	v	16	v	29	v	11	v	20	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	9.68E-02	(8)	< 2.9184	u	< 4.0338	u	< 3.8844	u	< 2.281	u	< 2.2114	u	< 2.3684	u	< 2.3708	u	< 2.3862	u	< 2.3465	u	< 2.2842	u	< 2.3284	u	< 2.3189	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	2.9	v	1	v	2.3	v	7.4	v	4.8	v	8	v	4.8	v	5.7	v	7.2	v	3.9	v	4.5	v	8.7	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	< 0.3648	u	< 0.5042	u	< 0.4855	u	< 0.2851	u	< 0.2764	u	< 0.2961	u	< 0.2963	u	< 0.2983	u	< 0.2933	u	< 0.2855	u	< 0.291	u	< 0.2899	u
Iron	5.50E+04	(2)	8.20E+05	(6)	7.00E+03	(9)	12000	v	7200	v	10000	v	18000	v	15000	v	20000	v	15000	v	16000	v	24000	v	14000	v	13000	v	17000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	9.2	v	17	v	16	v	< 0.1235	u	2.5	v	1.6	v	2.7	v	2.5	v	2.2	v	4.5	v	3.4	v	0.27	J
Manganese	1.80E+03	(2)	2.60E+04	(6)	5.60E+02	(9)	410	v	200	v	280	v	820	v	410	v	760	v	860	v	710	v	540	v	380	v	370	v	1200	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	0.0087	J	0.0085	J	0.011	J	0.0039	J	0.0055	J	< 0.0035	u	0.033	J	0.0057	J	0.0035	J	0.015	J	0.041	v	0.0037	J
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	4.4	v	0.69	J	3.1	v	15	v	8.2	v	16	v	8.4	v	10	v	16	v	6.9	v	7.8	v	16	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E+01	(8)	< 2.1567	u	< 2.9914	u	< 2.8977	u	< 1.7373	u	< 1.6954	u	< 1.8212	u	< 1.8329	u	< 1.8428	u	< 1.7741	u	< 1.6858	u	< 1.7341	u	< 1.7557	u
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	< 0.0419	u	< 0.0581	u	< 0.0563	u	< 0.0338	u	< 0.0329	u	< 0.0354	u	< 0.0356	u	< 0.0358	u	< 0.0345	u	< 0.0328	u	< 0.0337	u	< 0.0341	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	11	v	2.3	J	7.2	v	18	v	21	v	14	v	23	v	24	v	23	v	22	v	17	v	15	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	22	v	24	v	27	v	23	v	14	v	23	v	20	v	19	v	24	v	17	v	18	v	24	v
Volatiles (mg/kg)																														
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	< 0.0033	u	< 0.0651	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0536	u	< 0.0026	u	< 0.0003	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	< 0.0061	u	< 0.1206	u	< 0.0107	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0993	u	< 0.0048	u	< 0.0003	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	< 0.0049	u	< 0.0962	u	< 0.0086	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0792	u	< 0.0038	u	< 0.0004	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	< 0.0048	u	< 0.0954	u	< 0.0085	u	< 0.0019	u	< 0.0021	u	< 0.0025	u	< 0.0019	u	< 0.0018	u	< 0.0022	u	< 0.0786	u	< 0.0038	u	< 0.0019	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	< 0.0161	u	< 0.3176	u	< 0.0282	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	0.000473	J	< 0.0004	u	< 0.0005	u	< 0.2615	u	< 0.0125	u	< 0.0004	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	< 0.0028	u	< 0.0547	u	< 0.0049	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.045	u	< 0.0022	u	< 0.0003	u
1,1-Dichloropropene	-	-	-	-	-	-	< 0.006	u	< 0.1182	u	< 0.0105	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0974	u	< 0.0047	u	< 0.0003	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	< 0.0086	u	< 0.1695	u	< 0.0151	u	< 0.0007	u	< 0.0008	u	< 0.0009	u	< 0.0007	u	< 0.0007	u	< 0.0008	u	< 0.1395	u	< 0.0067	u	< 0.0007	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	< 0.0067	u	< 0.1332	u	< 0.0118	u	< 0.0007	u	< 0.0007	u	< 0.0009	u	< 0.0007	u	< 0.0006	u	< 0.0008	u	< 0.1097	u	< 0.0053	u	< 0.0007	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.00741	u	< 0.14652	u	< 0.01302	u	< 0.00071	u	< 0.00077	u	< 0.00093	u	< 0.00072	u	< 0.00066	u	< 0.00082	u	< 0.12063	u	< 0.00578	u	< 0.00071	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	0.11	v	25	v	0.17	v	0.00263	v	0.00106	J	0.00363	v	< 0.0005	u	0.00194	v	0.00201	J	9.7	v	0.021	J	0.00236	v
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	< 0.0069	u	< 0.1364	u	< 0.0121	u	< 0.0006	u	< 0.0006	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.1123	u	< 0.0054	u	< 0.0006	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	< 0.0032	u	< 0.0632	u	< 0.0056	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0521	u	< 0.0025	u	< 0.0002	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.00242	u	< 0.04789	u	< 0.00425	u	< 0.00042	u	< 0.00046	u	< 0.00055	u	< 0.00042	u	< 0.00039	u	< 0.00048	u	< 0.03943	u	< 0.00189	u	< 0.00042	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	< 0.0161	u	< 0.3176	u	< 0.0282	u	< 0.0005	u	< 0.0006	u	< 0.0007	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.2615	u	< 0.0125	u	< 0.0005	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	< 0.0022	u	< 0.0444	u	< 0.0039	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0365	u	< 0.0018	u	< 0.0004	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	0.054	v	8.4	v	0.056	J	0.00179	J	0.000477	J	0.0022	J	< 0.0003	u	0.00119	J	0.00114	J	4.7	v	0.0048	J	0.00159	J
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.00473	u	< 0.09349	u	< 0.0083	u	< 0.00032	u	< 0.00035	u	< 0.00042	u	< 0.00032	u	< 0.0003	u	< 0.00037	u	< 0.07697	u	< 0.00369	u	< 0.00032	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	< 0.0055	u	< 0.1094	u	< 0.0097	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.09	u	< 0.0043	u	< 0.0003	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.005	u	< 0.0989	u	< 0.00879	u	< 0.0003	u	< 0.00032	u	< 0.00039	u	< 0.0003	u	< 0.00027	u	< 0.00034	u	< 0.08143	u	< 0.0039	u	< 0.00029	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	0.63	v	46	v	0.38	v	0.000843	J	< 0.00081	u	< 0.00098	u	< 0.00075	u	< 0.00069	u	< 0.00086	u	27	v	0.37	v	< 0.00074	u
2,2-Dichloropropane	-	-	-	-	-	-	< 0.0059	u	< 0.1156	u	< 0.0103	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0952	u	< 0.0046	u	< 0.0003	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	< 0.0258	u	< 0.5105	u	< 0.0454	u	< 0.0006	u	0.00176	J	< 0.0008	u	0.00273	J	0.00175	J	< 0.0007	u	< 0.4203	u	< 0.0202	u	< 0.0006	u
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	< 0.0045	u	< 0.0897	u	< 0.008	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0739	u	< 0.0035	u	< 0.0004	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	< 0.0099	u	< 0.1953	u	< 0.0174	u	< 0.0004	u	0.000726	J	< 0.0005	u	0.000724	J	< 0.0004	u	< 0.0005	u	< 0.1608	u	< 0.0077	u	< 0.0004	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	0.74	v	80	v	0.69	v	0.000852	J	< 0.00081	u	< 0.00097	u	< 0.00075	u	< 0.00069	u	< 0.00085	u	41	v	0.3	v	< 0.00074	u
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	4.80E+00	(9)	< 0.003	u	< 0.06	u	< 0.0053	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0494	u	< 0.0024	u	< 0.0004	u
4-Isopropyltoluene	-	-	-	-	-	-	0.0092	J	1.2	v	0.02	J	< 0.0007	u	< 0.0008	u	< 0.001	u	< 0.0007	u	< 0.0007	u	< 0.0009	u	0.95	v	0.014	J	< 0.0007	u
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	< 0.007	u	< 0.1378	u	< 0.0122	u	< 0.0008	u	< 0.0009	u	< 0.0011	u	< 0.0008	u	< 0.0008	u	< 0.0009	u	< 0.1134	u	< 0.0054	u	< 0.0008	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	< 0.03	u	< 0.5921	u	< 0.0526	u	0.00186	J	0.00854	J	0.00589	J	0.0111	v	0.00723	J	0.00158	J	< 0.4875	u	< 0.0234	u	0.00466	J
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	0.04	J	8	v	0.049	J	0.0179	v	0.00387	v	0.0226	v	0.00239	v	0.0123	v	0.0149	v	0.2	J	0.047	v	0.0178	v
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	< 0.003	u	< 0.0589	u	< 0.0052	u	< 0.0005	u	< 0.0006	u	< 0.0007	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0485	u	< 0.0023	u	< 0.0005	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	< 0.0033	u	< 0.0649	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0535	u	< 0.0026	u	< 0.0003	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	< 0.0032	u	< 0.0638	u	< 0.0057	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0526	u	< 0.0025	u	< 0.0005	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	< 0.0078	u	< 0.1533	u	< 0.0136	u	< 0.0011	u	< 0.0012	u	< 0.0015	u	< 0.0011	u	< 0.0011	u	< 0.0013	u	< 0.1262	u	< 0.0061	u	< 0.0011	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	< 0.0289	u	< 0.5714	u	< 0.0508	u	< 0.0009	u	< 0.0009	u	< 0.0011	u	< 0.0009	u	< 0.0008	u	< 0.001	u	< 0.4705	u	< 0.0226	u	< 0.0009	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	< 0.0039	u	< 0.0773	u	< 0.0069	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0637	u	< 0.0031	u	< 0.0003	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	< 0.0031	u	< 0.0611	u	< 0.0054	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0503	u	< 0.0024	u	< 0.0002	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	< 0.0311	u	< 0.6146	u	< 0.0546	u	< 0.0019	u	< 0.0021	u	< 0.0025	u	< 0.0019	u	< 0.0018	u	< 0.0022	u	< 0.506	u	< 0.0243	u	< 0.0019	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	< 0.0042	u	< 0.0828	u	< 0.0074	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0681	u	< 0.0033	u	< 0.0004	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	< 0.0047	u	< 0.0919	u	< 0.0082	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0757	u	< 0.0036	u	< 0.0002	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	< 0.0051	u	< 0.1005	u	< 0.0089	u	< 0.0005	u	< 0.0005	u	< 0.0007	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0827	u	< 0.004	u	< 0.0005	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0028	u	< 0.0551	u	< 0.0049	u	< 0.0019	u	< 0.0021	u	< 0.0025	u	< 0.0019	u	< 0.0018	u	< 0.0022	u	< 0.0454	u	< 0.0022	u	< 0.0019	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	< 0.003	u	< 0.0595	u	< 0.0053	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.049	u	< 0.0024	u	< 0.0002	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-5 (2-4')		SWMU 10-5 (4-6')		SWMU 10-5 (14-16')		SWMU 10-5 (22-24')		SWMU 10-6 (2-4')		SWMU 10-6 (10-12')		SWMU 10-7 (2-4')		SWMU 10-7 (4-6')		SWMU 10-7 (18-20')		SWMU 10-8 (2-4')		SWMU 10-8 (4-6')		SWMU 10-8 (18-20')	
							1505003-002		1505003-003		1505003-004		1505003-005		1505223-001		1505223-002		1505059-001		1505059-002		1505059-003		1505057-005		1505057-006		1505057-007	
							4/29/2015		4/29/2015		4/29/2015		4/29/2015		5/4/2015		5/4/2015		5/1/2015		5/1/2015		5/1/2015		4/30/2015		4/30/2015		4/30/2015	
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	< 0.0042	u	< 0.0836	u	< 0.0074	u	< 0.0011	u	< 0.0012	u	< 0.0014	u	< 0.0011	u	< 0.001	u	< 0.0012	u	< 0.0688	u	< 0.0033	u	< 0.0011	u
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	< 0.0101	u	< 0.1997	u	< 0.0177	u	< 0.0008	u	< 0.0008	u	< 0.001	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.1644	u	< 0.0079	u	< 0.0008	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	0.03	J	14	v	0.026	J	0.00258	v	0.000767	J	0.0035	v	0.000502	J	0.00188	v	0.00213	J	1.4	v	0.044	v	0.00285	v
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.00558	u	< 0.11026	u	< 0.00979	u	< 0.00038	u	< 0.00041	u	< 0.0005	u	< 0.00038	u	< 0.00035	u	< 0.00044	u	< 0.09078	u	< 0.00435	u	< 0.00038	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	0.0046	J	2.6	v	0.013	J	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	0.52	J	0.012	J	0.000447	J
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	< 0.0057	u	< 0.1123	u	< 0.01	u	< 0.0008	u	< 0.0009	u	< 0.001	u	0.0014	J	0.000891	J	< 0.0009	u	< 0.0925	u	< 0.0044	u	< 0.0008	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	< 0.0161	u	< 0.3176	u	< 0.0282	u	0.000565	J	0.000695	J	< 0.0006	u	0.000637	J	0.000686	J	0.000704	J	< 0.2615	u	< 0.0125	u	< 0.0005	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	0.16	v	26	v	0.11	J	0.000785	J	< 0.00067	u	0.00103	J	< 0.00063	u	< 0.00058	u	< 0.00071	u	7.8	v	0.14	v	0.000809	J
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	0.016	J	1.9	J	0.038	J	< 0.0008	u	< 0.0009	u	< 0.001	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	1.2	J	0.023	J	< 0.0008	u
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	0.01	J	3.8	v	0.026	J	0.000469	J	< 0.0004	u	0.000638	J	< 0.0004	u	< 0.0003	u	< 0.0004	u	0.85	v	0.026	J	0.000428	J
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	< 0.0057	u	1.2	v	< 0.0101	u	0.000766	J	0.000695	J	0.000925	J	< 0.0005	u	0.00065	J	0.000792	J	0.51	J	0.011	J	0.000714	J
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	< 0.0074	u	< 0.1457	u	< 0.013	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.12	u	< 0.0058	u	< 0.0003	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	< 0.0046	u	< 0.091	u	< 0.0081	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0749	u	< 0.0036	u	< 0.0003	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	< 0.0035	u	< 0.0688	u	< 0.0061	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0566	u	< 0.0027	u	< 0.0004	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	0.024	J	7.1	v	0.013	J	0.0112	v	0.00275	v	0.0146	v	0.00181	J	0.00801	v	0.00962	v	0.48	J	< 0.0037	u	0.0122	v
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	< 0.0026	u	< 0.0516	u	< 0.0046	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0425	u	< 0.002	u	< 0.0003	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0072	u	< 0.143	u	< 0.0127	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.1177	u	< 0.0056	u	< 0.0002	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	< 0.0039	u	< 0.0773	u	< 0.0069	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0637	u	< 0.0031	u	< 0.0004	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	< 0.0121	u	< 0.2397	u	< 0.0213	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.1973	u	< 0.0095	u	< 0.0004	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	< 0.0161	u	< 0.3176	u	< 0.0282	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.2615	u	< 0.0125	u	< 0.0002	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	0.15	v	54	v	0.11	J	0.00849	v	0.0022	v	0.0116	v	0.00146	J	0.00622	v	0.00711	v	13	v	0.016	J	0.00872	v
Semi-volatiles (mg/kg)																														
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.7588	u	< 0.2044	u	< 0.2032	u	< 0.1151	u	< 0.1126	u	< 0.1209	u	< 0.2417	u	< 0.1213	u	< 0.12	u	< 1.1646	u	< 0.1185	u	< 0.1177	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.7091	u	< 0.191	u	< 0.1898	u	< 0.1076	u	< 0.1052	u	< 0.1129	u	< 0.2259	u	< 0.1134	u	< 0.1121	u	< 1.0882	u	< 0.1107	u	< 0.11	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.6584	u	< 0.1774	u	< 0.1763	u	< 0.0999	u	< 0.0977	u	< 0.1049	u	< 0.2097	u	< 0.1053	u	< 0.1041	u	< 1.0104	u	< 0.1028	u	< 0.1021	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.7754	u	< 0.2089	u	< 0.2076	u	< 0.1176	u	< 0.1151	u	< 0.1235	u	< 0.247	u	< 0.124	u	< 0.1226	u	< 1.1899	u	< 0.1211	u	< 0.1202	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.6871	u	16	v	< 0.184	u	< 0.1042	u	< 0.102	u	< 0.1094	u	< 0.2189	u	< 0.1099	u	< 0.1087	u	68	v	0.26	v	< 0.1066	u
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	< 0.8639	u	< 0.2327	u	< 0.2313	u	< 0.131	u	< 0.1282	u	< 0.1376	u	< 0.2752	u	< 0.1381	u	< 0.1366	u	< 1.3258	u	< 0.1349	u	< 0.134	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	< 0.857	u	< 0.2309	u	< 0.2295	u	< 0.13	u	< 0.1272	u	< 0.1365	u	< 0.273	u	< 0.137	u	< 0.1355	u	< 1.3153	u	< 0.1338	u	< 0.1329	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	< 0.7413	u	< 0.1997	u	< 0.1985	u	< 0.1124	u	< 0.11	u	< 0.1181	u	< 0.2361	u	< 0.1185	u	< 0.1172	u	< 1.1377	u	< 0.1158	u	< 0.115	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	< 0.5827	u	< 0.157	u	< 0.156	u	< 0.0884	u	< 0.0865	u	< 0.0928	u	< 0.1856	u	< 0.0932	u	< 0.0921	u	< 0.8942	u	< 0.091	u	< 0.0904	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	< 0.308	u	< 0.083	u	< 0.0825	u	< 0.0467	u	< 0.0457	u	< 0.0491	u	< 0.0981	u	< 0.0492	u	< 0.0487	u	< 0.4727	u	< 0.0481	u	< 0.0478	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	< 0.6632	u	< 0.1787	u	< 0.1776	u	< 0.1006	u	< 0.0984	u	< 0.1056	u	< 0.2113	u	< 0.106	u	< 0.1049	u	< 1.0178	u	< 0.1036	u	< 0.1028	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	< 0.824	u	< 0.222	u	< 0.2206	u	< 0.125	u	< 0.1223	u	< 0.1312	u	< 0.2625	u	< 0.1317	u	< 0.1303	u	< 1.2646	u	< 0.1287	u	< 0.1278	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	< 0.7942	u	< 0.214	u	< 0.2126	u	< 0.1205	u	< 0.1179	u	< 0.1265	u	< 0.253	u	< 0.127	u	< 0.1256	u	< 1.2189	u	< 0.124	u	< 0.1232	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	< 0.6918	u	< 0.1864	u	< 0.1852	u	< 0.1049	u	< 0.1027	u	< 0.1102	u	< 0.2204	u	< 0.1106	u	< 0.1094	u	< 1.0617	u	< 0.108	u	< 0.1073	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.6784	u	26	v	< 0.1816	u	< 0.1029	u	< 0.1007	u	< 0.1081	u	< 0.2161	u	< 0.1085	u	< 0.1073	u	89	v	0.35	v	< 0.1052	u
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	< 0.7432	u	< 0.2002	u	< 0.199	u	< 0.1127	u	< 0.1103	u	< 0.1184	u	< 0.2367	u	< 0.1188	u	< 0.1175	u	< 1.1405	u	< 0.1161	u	< 0.1152	u
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	< 0.8435	u	< 0.2272	u	< 0.2258	u	< 0.128	u	< 0.1252	u	< 0.1344	u	< 0.2687	u	< 0.1349	u	< 0.1334	u	< 1.2945	u	< 0.1317	u	< 0.1308	u
2-Nitrophenol	-	-	-	-	-	-	< 0.6663	u	< 0.1795	u	< 0.1784	u	< 0.1011	u	< 0.0989	u	< 0.1061	u	< 0.2123	u	< 0.1065	u	< 0.1054	u	< 1.0225	u	< 0.1041	u	< 0.1033	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	< 0.5708	u	< 0.1538	u	< 0.1528	u	< 0.0866	u	< 0.0847	u	< 0.0909	u	< 0.1818	u	< 0.0913	u	< 0.0903	u	< 0.876	u	< 0.0891	u	< 0.0885	u
3+4-Methylphenol	-	-	-	-	-	-	< 0.7683	u	< 0.207	u	< 0.2057	u	< 0.1165	u	< 0.114	u	< 0.1224	u	< 0.2448	u	< 0.1228	u	< 0.1215	u	< 1.1791	u	< 0.12	u	< 0.1191	u
3-Nitroaniline	-	-	-	-	-	-	< 0.7142	u	< 0.1924	u	< 0.1912	u	< 0.1083	u	< 0.106	u	< 0.1138	u	< 0.2275	u	< 0.1142	u	< 0.1129	u	< 1.0961	u	< 0.1115	u	< 0.1108	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	< 0.4031	u	< 0.1086	u	< 0.1079	u	< 0.0611	u	< 0.0598	u	< 0.0642	u	< 0.1284	u	< 0.0644	u	< 0.0637	u	< 0.6186	u	< 0.0629	u	< 0.0625	u
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 0.7865	u	< 0.2119	u	< 0.2106	u	< 0.1193	u	< 0.1167	u	< 0.1253	u	< 0.2505	u	< 0.1258	u	< 0.1244	u	< 1.207	u	< 0.1228	u	< 0.122	u
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 0.7381	u	< 0.1988	u	< 0.1976	u	< 0.112	u	< 0.1096	u	< 0.1176	u	< 0.2351	u	< 0.118	u	< 0.1167	u	< 1.1327	u	< 0.1153	u	< 0.1145	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	< 0.6856	u	< 0.1847	u	< 0.1836	u	< 0.104	u	< 0.1018	u	< 0.1092	u	< 0.2184	u	< 0.1096	u	< 0.1084	u	< 1.0521	u	< 0.1071	u	< 0.1063	u
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 1.1039	u	< 0.2974	u	< 0.2955	u	< 0.1674	u	< 0.1638	u	< 0.1758	u	< 0.3516	u	< 0.1765	u	< 0.1745	u	< 1.6941	u	< 0.1724	u	< 0.1712	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	< 0.6658	u	< 0.1794	u	< 0.1783	u	< 0.101	u	< 0.0988	u	< 0.1061	u	< 0.2121	u	< 0.1065	u	< 0.1053	u	< 1.0218	u	< 0.104	u	< 0.1033	u
4-Nitrophenol	-	-	-	-	-	-	< 0.6387	u	< 0.1721	u	< 0.171	u	< 0.0969	u	< 0.0948	u	< 0.1017	u	< 0.2035	u	< 0.1021	u	< 0.101	u	< 0.9802	u	< 0.0997	u	< 0.099	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	< 0.9033	u	< 0.2434	u	< 0.2419	u	< 0.137	u	< 0.1341	u	< 0.1439	u	< 0.2878	u	< 0.1444	u	< 0.1428	u	< 1.3863	u	< 0.1411	u	< 0.1401	u
Acenaphthylene	-	-	-	-	-	-	< 0.751	u	< 0.2023	u	< 0.2011	u	< 0.1139	u	< 0.1115	u	< 0.1196	u	< 0.2392	u	< 0.1201	u	< 0.1187	u	< 1.1525	u	< 0.1173	u	< 0.1165	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	< 0.6453	u	< 0.1738	u	< 0.1728	u	< 0.0979	u	< 0.0958	u	< 0.1028	u	< 0.2056	u	< 0.1032	u	< 0.102	u	< 0.9902	u	< 0.1008	u	< 0.1001	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	< 0.6297	u	< 0.1696	u	< 0.1686	u	< 0.0955	u	< 0.0935	u	< 0.1003	u	< 0.2006	u	< 0.1007	u	< 0.0996	u	< 0.9664	u	< 0.0983	u	< 0.0976	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	< 0.831	u	< 0.2239	u	< 0.2225	u	< 0.1261	u	< 0.1233	u	< 0.1324	u	< 0.2647	u	< 0.1329	u	< 0.1314	u	< 1.2753	u	< 0.1298	u	< 0.1289	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	< 0.5826	u	< 0.157	u	< 0.156	u	< 0.0884	u	< 0.0865	u	< 0.0928	u	< 0.1856	u	< 0.0932	u	< 0.0921	u	< 0.8941	u	< 0.091	u	< 0.0904	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	< 0.8319	u	< 0.2241	u	< 0.2227	u	< 0.1262	u	< 0.1235	u	< 0.1325	u	< 0.265	u	< 0.133	u	< 0.1315	u	< 1.2767	u	< 0.1299	u	< 0.129	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	< 0.7039	u	< 0.1896	u	< 0.1885	u	< 0.1068	u	< 0.1045	u	< 0.1121	u	< 0.2242	u	< 0.1126	u	< 0.1113	u	< 1.0803	u	< 0.1099	u	< 0.1092	u
Benzo(g,h,i)perylene	-	-	-	-	-	-	< 0.8436	u	< 0.2273	u	< 0.2259	u	< 0.128	u	< 0.1252	u	< 0.1344	u	< 0.2687	u	< 0.1349	u	< 0.1334	u	< 1.2946	u	< 0.1317	u	< 0.1308	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	< 0.8377	u	< 0.2257	u	< 0.2243	u	< 0.1271	u	< 0.1243	u	< 0.1334	u	< 0.2669	u	< 0.1339	u	< 0.1325	u	< 1.2857	u	< 0.1308	u	< 0.1299	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	< 0.4224	u	< 0.1138	u	< 0.1131	u	< 0.0641	u	< 0.0627	u	< 0.0673	u	< 0.1346	u	< 0.0675	u	< 0.0668	u	< 0.6482	u	< 0.066	u	< 0.0655	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	< 0.6585	u	< 0.1774	u	< 0.1763	u	< 0.0999	u	< 0.0977	u	< 0.1049	u	< 0.2098	u	< 0.1053	u	< 0.1041	u	< 1.0105	u	< 0.1028	u	< 0.1021	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	< 0.7075	u	< 0.1906	u	< 0.1894	u	< 0.1073	u	< 0.105	u	< 0.1127	u	< 0.2254	u	< 0.1131	u	< 0.1119	u	< 1.0858	u	< 0.1105	u	< 0.1097	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	< 0.7325	u	< 0.1973	u	< 0.1961	u	< 0.1111	u	< 0.1087	u	< 0.1167	u	< 0.2333	u	< 0.1171	u	< 0.1158	u	< 1.1241	u	< 0.1144	u	< 0.1136	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-5 (2-4')		SWMU 10-5 (4-6')		SWMU 10-5 (14-16')		SWMU 10-5 (22-24')		SWMU 10-6 (2-4')		SWMU 10-6 (10-12')		SWMU 10-7 (2-4')		SWMU 10-7 (4-6')		SWMU 10-7 (18-20')		SWMU 10-8 (2-4')		SWMU 10-8 (4-6')		SWMU 10-8 (18-20')	
							1505003-002		1505003-003		1505003-004		1505003-005		1505223-001		1505223-002		1505059-001		1505059-002		1505059-003		1505057-005		1505057-006		1505057-007	
							4/29/2015		4/29/2015		4/29/2015		4/29/2015		5/4/2015		5/4/2015		5/1/2015		5/1/2015		5/1/2015		4/30/2015		4/30/2015		4/30/2015	
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	< 0.5663	u	< 0.1526	u	< 0.1516	u	< 0.0859	u	< 0.0841	u	< 0.0902	u	< 0.1804	u	< 0.0905	u	< 0.0895	u	< 0.8691	u	< 0.0884	u	< 0.0878	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	< 0.8328	u	< 0.2244	u	< 0.223	u	< 0.1263	u	< 0.1236	u	< 0.1327	u	< 0.2653	u	< 0.1332	u	< 0.1317	u	< 1.2781	u	< 0.1301	u	< 0.1292	u
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	< 0.905	u	< 0.2438	u	< 0.2423	u	< 0.1373	u	< 0.1343	u	< 0.1441	u	< 0.2883	u	< 0.1447	u	< 0.1431	u	< 1.3889	u	< 0.1413	u	< 0.1403	u
Carbazole	-	-	-	-	-	-	< 0.6904	u	< 0.186	u	< 0.1849	u	< 0.1047	u	< 0.1025	u	< 0.11	u	< 0.2199	u	< 0.1104	u	< 0.1092	u	< 1.0596	u	< 0.1078	u	< 0.1071	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	< 0.7444	u	< 0.2005	u	< 0.1993	u	< 0.1129	u	< 0.1105	u	< 0.1186	u	< 0.2371	u	< 0.119	u	< 0.1177	u	< 1.1424	u	< 0.1162	u	< 0.1154	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	< 0.8031	u	< 0.2164	u	< 0.215	u	< 0.1218	u	< 0.1192	u	< 0.1279	u	< 0.2558	u	< 0.1284	u	< 0.127	u	< 1.2325	u	< 0.1254	u	< 0.1245	u
Dibenzofuran	-	-	-	-	-	-	< 0.7928	u	< 0.2136	u	< 0.2123	u	< 0.1203	u	< 0.1177	u	< 0.1263	u	< 0.2526	u	< 0.1268	u	< 0.1254	u	< 1.2167	u	< 0.1238	u	< 0.1229	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	< 0.8413	u	< 0.2266	u	< 0.2252	u	< 0.1276	u	< 0.1249	u	< 0.134	u	< 0.268	u	< 0.1345	u	< 0.133	u	< 1.2911	u	< 0.1314	u	< 0.1305	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	< 0.6822	u	< 0.1838	u	< 0.1827	u	< 0.1035	u	< 0.1013	u	< 0.1087	u	< 0.2173	u	< 0.1091	u	< 0.1079	u	< 1.047	u	< 0.1065	u	< 0.1058	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	< 0.8384	u	< 0.2259	u	< 0.2245	u	< 0.1272	u	< 0.1244	u	< 0.1335	u	< 0.2671	u	< 0.134	u	< 0.1326	u	< 1.2866	u	< 0.1309	u	< 0.13	u
Di-n-octyl phthalate	-	-	-	-	-	-	< 0.8252	u	< 0.2223	u	< 0.221	u	< 0.1252	u	< 0.1225	u	< 0.1314	u	< 0.2629	u	< 0.1319	u	< 0.1305	u	< 1.2665	u	< 0.1289	u	< 0.128	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	< 0.8996	u	< 0.2423	u	< 0.2408	u	< 0.1365	u	< 0.1335	u	< 0.1433	u	< 0.2866	u	< 0.1438	u	< 0.1422	u	< 1.3805	u	< 0.1405	u	< 0.1395	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	< 1.0092	u	1.4	v	< 0.2702	u	< 0.1531	u	< 0.1498	u	< 0.1607	u	< 0.3215	u	< 0.1614	u	< 0.1596	u	8.1	v	< 0.1576	u	< 0.1565	u
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	< 0.6997	u	< 0.1885	u	< 0.1873	u	< 0.1061	u	< 0.1038	u	< 0.1114	u	< 0.2229	u	< 0.1119	u	< 0.1106	u	< 1.0737	u	< 0.1093	u	< 0.1085	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.7334	u	< 0.1976	u	< 0.1964	u	< 0.1112	u	< 0.1089	u	< 0.1168	u	< 0.2336	u	< 0.1173	u	< 0.116	u	< 1.1255	u	< 0.1145	u	< 0.1137	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	< 0.5142	u	< 0.1385	u	< 0.1377	u	< 0.078	u	< 0.0763	u	< 0.0819	u	< 0.1638	u	< 0.0822	u	< 0.0813	u	< 0.7891	u	< 0.0803	u	< 0.0797	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	< 0.6599	u	< 0.1778	u	< 0.1767	u	< 0.1001	u	< 0.0979	u	< 0.1051	u	< 0.2102	u	< 0.1055	u	< 0.1043	u	< 1.0127	u	< 0.1031	u	< 0.1023	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	< 0.8424	u	< 0.2269	u	< 0.2256	u	< 0.1278	u	< 0.125	u	< 0.1342	u	< 0.2684	u	< 0.1347	u	< 0.1332	u	< 1.2929	u	< 0.1316	u	< 0.1306	u
Isophorone	5.61E+03	(1)	2.70E+04	(4)	4.22E+00	(8)	< 0.7904	u	< 0.2129	u	< 0.2116	u	< 0.1199	u	< 0.1173	u	< 0.1259	u	< 0.2518	u	< 0.1264	u	< 0.125	u	< 1.2129	u	< 0.1234	u	< 0.1226	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.7053	u	5.8	v	< 0.1889	u	< 0.107	u	< 0.1047	u	< 0.1123	u	< 0.2247	u	< 0.1128	u	< 0.1115	u	18	v	0.15	J	< 0.1094	u
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	< 0.7632	u	< 0.2056	u	< 0.2043	u	< 0.1158	u	< 0.1133	u	< 0.1216	u	< 0.2431	u	< 0.122	u	< 0.1207	u	< 1.1713	u	< 0.1192	u	< 0.1184	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	< 0.7684	u	< 0.207	u	< 0.2057	u	< 0.1166	u	< 0.114	u	< 0.1224	u	< 0.2448	u	< 0.1229	u	< 0.1215	u	< 1.1792	u	< 0.12	u	< 0.1192	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	< 0.6637	u	< 0.1788	u	< 0.1777	u	< 0.1007	u	< 0.0985	u	< 0.1057	u	< 0.2114	u	< 0.1061	u	< 0.1049	u	< 1.0185	u	< 0.1036	u	< 0.1029	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	< 0.4628	u	< 0.1247	u	< 0.1239	u	< 0.0702	u	< 0.0687	u	< 0.0737	u	< 0.1474	u	< 0.074	u	< 0.0732	u	< 0.7103	u	< 0.0723	u	< 0.0718	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	1.1	J	3	v	< 0.2076	u	< 0.1176	u	< 0.1151	u	< 0.1235	u	< 0.247	u	< 0.124	u	< 0.1226	u	15	v	< 0.1211	u	< 0.1203	u
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	< 0.6644	u	< 0.179	u	< 0.1779	u	< 0.1008	u	< 0.0986	u	< 0.1058	u	< 0.2116	u	< 0.1062	u	< 0.105	u	< 1.0196	u	< 0.1038	u	< 0.103	u
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	< 0.9567	u	< 0.2577	u	< 0.2562	u	< 0.1451	u	< 0.142	u	< 0.1524	u	< 0.3048	u	< 0.153	u	< 0.1513	u	< 1.4683	u	< 0.1494	u	< 0.1484	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	< 0.6229	u	< 0.1678	u	< 0.1668	u	< 0.0945	u	< 0.0925	u	< 0.0992	u	< 0.1984	u	< 0.0996	u	< 0.0985	u	< 0.956	u	< 0.0973	u	< 0.0966	u
Total Petroleum Hydrocarbons (mg/kg)																														
Gasoline Range Organics (GRO)	-		-		-		4.7	v	740	v	13	v	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	670	v	10	v	< 1	u
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-		780	v	**3000**	v	< 5	u	< 6	u	< 6	u	< 5	u	39	v	< 6	u	< 5	u	**9700**	v	25	v	< 6.3	u
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-		300	v	< 484	u	< 50	u	< 50	u	< 50	u	< 48	u	< 49	u	< 50	u	< 49	u	**2000**	v	< 56	u	< 57	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 461
(9) SoilGW Risk-based EPA DAF = 461
(10) SoilGW MCL-based EPA DAF = 461
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-9 (2-4')		SWMU 10-9 (4-6')		SWMU 10-9 (18-20')		SWMU 10-10 (2-4')		SWMU 10-10 (4-6')		SWMU 10-10 (18-20')		SWMU 10-11 (4-6')		SWMU 10-11 (8-10')		SWMU 10-11 (18-20')		SWMU 10-12 (6-8')		SWMU 10-12 (20-22')		SWMU 10-13 (2-4')	
							1505057-001		1505057-002		1505057-003		1505058-001		1505058-002		1505058-003		1505570-003		1505570-004		1505570-003		1505617-001		1505617-002		1505617-003	
							4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/13/2015	
Metals (mg/kg)																														
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	< 1.5359	u	< 1.5635	u	< 1.5233	u	< 1.4463	u	< 1.5493	u	2.7	J	< 1.4896	u	< 3.243	u	< 3.0138	u	< 2.9662	u	< 1.4434	u	< 1.4296	u
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	1.8	J	1.1	J	2.2	J	2.4	J	1.6	J	1.9	J	< 0.3324	u	0.91	J	0.84	J	1.9	J	2	J	1.3	J
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	220	v	250	v	360	v	450	v	360	v	240	v	240	v	330	v	420	v	1700	v	500	v	260	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	0.77	v	0.94	v	0.99	v	0.28	v	0.93	v	1	v	0.61	v	0.98	v	0.89	v	1.1	v	0.94	v	0.71	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	< 0.0324	u	< 0.033	u	< 0.0322	u	< 0.0305	u	< 0.0327	u	< 0.0322	u	< 0.0314	u	< 0.0685	u	< 0.0318	u	< 0.0313	u	< 0.0305	u	< 0.0302	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	17	v	14	v	14	v	13	v	12	v	14	v	7.3	v	8.1	v	11	v	12	v	14	v	7.8	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	9.68E-02	(8)	< 2.3327	u	< 2.4023	u	< 2.3271	u	< 2.2802	u	< 2.4258	u	< 2.3458	u	< 2.2359	u	< 2.4211	u	< 2.2794	u	< 2.3277	u	< 2.1955	u	< 2.1284	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	4.6	v	5.3	v	7.6	v	3.1	v	4.1	v	7.9	v	3.5	v	5	v	7.7	v	5.7	v	9.1	v	4	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	< 0.2916	u	< 0.3003	u	< 0.2909	u	< 0.285	u	< 0.3032	u	< 0.2932	u	< 0.2795	u	< 0.3026	u	< 0.2849	u	< 0.291	u	< 0.2744	u	< 0.2661	u
Iron	5.50E+04	(2)	8.20E+05	(6)	7.00E+03	(9)	12000	v	16000	v	20000	v	9200	v	13000	v	20000	v	9200	v	12000	v	16000	v	21000	v	20000	v	15000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	4.8	v	3.2	v	2.3	v	4.1	v	4	v	2	v	3.4	v	5.8	v	3.5	v	3.7	v	1.8	v	2.9	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	5.60E+02	(9)	180	v	290	v	860	v	94	v	170	v	990	v	320	v	400	v	890	v	470	v	1300	v	390	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	0.07	J	0.0086	J	0.0059	J	0.044	v	0.012	J	< 0.0032	u	0.05	v	0.014	J	< 0.0032	u	< 0.0034	u	< 0.0032	u	< 0.003	u
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	7.7	v	10	v	15	v	4.4	v	7.7	v	17	v	5.8	v	7.8	v	13	v	10	v	16	v	6.5	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E+01	(8)	< 1.7886	u	< 1.8206	u	< 1.7738	u	< 1.6842	u	< 1.8042	u	< 1.7762	u	< 1.7346	u	< 3.7764	u	< 1.7547	u	< 1.727	u	< 1.6808	u	< 1.6647	u
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	< 0.0348	u	< 0.0354	u	< 0.0345	u	< 0.0327	u	< 0.0351	u	< 0.0345	u	< 0.0337	u	< 0.0734	u	< 0.0341	u	< 0.0336	u	< 0.0327	u	< 0.0323	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	18	v	19	v	49	v	21	v	18	v	21	v	13	v	14	v	5.2	v	21	v	25	v	19	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	24	v	32	v	21	v	15	v	19	v	25	v	16	v	18	v	23	v	20	v	28	v	13	v
Volatiles (mg/kg)																														
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	< 0.0003	u	< 0.0119	u	< 0.0004	u	< 0.0003	u	< 0.0489	u	< 0.0003	u	< 0.0129	u	< 0.0027	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	< 0.0002	u	< 0.022	u	< 0.0003	u	< 0.0002	u	< 0.0905	u	< 0.0003	u	< 0.0238	u	< 0.0049	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	< 0.0004	u	< 0.0175	u	< 0.0005	u	< 0.0004	u	< 0.0722	u	< 0.0004	u	< 0.019	u	< 0.0039	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	< 0.0018	u	< 0.0174	u	< 0.0024	u	< 0.0016	u	< 0.0716	u	< 0.0019	u	< 0.0189	u	< 0.0039	u	< 0.0024	u	< 0.0023	u	< 0.0028	u	< 0.0025	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	< 0.0004	u	< 0.0578	u	< 0.0006	u	< 0.0004	u	< 0.2384	u	< 0.0004	u	< 0.0628	u	< 0.0129	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0006	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	< 0.0003	u	< 0.01	u	< 0.0004	u	< 0.0003	u	< 0.041	u	< 0.0003	u	< 0.0108	u	< 0.0022	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u
1,1-Dichloropropene	-	-	-	-	-	-	< 0.0003	u	< 0.0215	u	< 0.0004	u	< 0.0003	u	< 0.0888	u	< 0.0003	u	< 0.0234	u	< 0.0048	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	< 0.0006	u	< 0.0309	u	< 0.0009	u	< 0.0006	u	< 0.1272	u	< 0.0007	u	< 0.0335	u	< 0.0069	u	< 0.0009	u	< 0.0009	u	< 0.001	u	< 0.0009	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	< 0.0006	u	< 0.0243	u	< 0.0008	u	< 0.0006	u	< 0.1	u	< 0.0007	u	< 0.0263	u	< 0.0054	u	< 0.0009	u	< 0.0008	u	< 0.001	u	< 0.0009	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.00065	u	< 0.02668	u	< 0.00088	u	< 0.00059	u	< 0.10998	u	< 0.00069	u	< 0.02897	u	< 0.00596	u	< 0.0009	u	< 0.00087	u	< 0.00103	u	< 0.00093	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	< 0.0005	u	0.42	v	0.00229	J	< 0.0004	u	13	v	0.00238	v	0.4	v	0.79	v	0.00377	v	< 0.0006	u	0.00203	J	< 0.0007	u
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	< 0.0005	u	< 0.0248	u	< 0.0007	u	< 0.0005	u	< 0.1024	u	< 0.0005	u	< 0.027	u	< 0.0056	u	< 0.0007	u	< 0.0007	u	< 0.0008	u	< 0.0007	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	< 0.0002	u	< 0.0115	u	< 0.0003	u	< 0.0002	u	< 0.0475	u	< 0.0002	u	< 0.0125	u	< 0.0026	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.00038	u	< 0.00872	u	< 0.00052	u	< 0.00035	u	< 0.03595	u	< 0.00041	u	< 0.00947	u	< 0.00194	u	< 0.00053	u	< 0.00051	u	< 0.00061	u	< 0.00055	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	< 0.0005	u	< 0.0578	u	< 0.0006	u	< 0.0004	u	< 0.2384	u	< 0.0005	u	< 0.0628	u	< 0.0129	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0007	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	< 0.0004	u	< 0.0081	u	< 0.0005	u	< 0.0003	u	< 0.0333	u	< 0.0004	u	< 0.0088	u	< 0.0018	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	< 0.0003	u	0.12	J	0.00151	J	< 0.0003	u	4.7	v	0.00151	J	0.31	v	0.29	v	0.00245	v	< 0.0004	u	0.00134	J	< 0.0004	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.00029	u	< 0.01702	u	< 0.00039	u	< 0.00027	u	< 0.07018	u	< 0.00031	u	< 0.01848	u	< 0.0038	u	< 0.00041	u	< 0.00039	u	< 0.00046	u	< 0.00042	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	< 0.0003	u	< 0.0199	u	< 0.0004	u	< 0.0002	u	< 0.0821	u	< 0.0003	u	< 0.0216	u	< 0.0045	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.00027	u	< 0.01801	u	< 0.00037	u	< 0.00025	u	< 0.07423	u	< 0.00029	u	< 0.01955	u	< 0.00402	u	< 0.00038	u	< 0.00036	u	< 0.00043	u	< 0.00039	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.00068	u	1.1	v	< 0.00092	u	< 0.00062	u	28	v	< 0.00072	u	1.6	v	1.3	v	0.00126	J	< 0.00091	u	< 0.00108	u	< 0.00097	u
2,2-Dichloropropane	-	-	-	-	-	-	< 0.0003	u	< 0.021	u	< 0.0004	u	< 0.0003	u	< 0.0868	u	< 0.0003	u	< 0.0229	u	< 0.0047	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	0.00234	J	< 0.093	u	< 0.0008	u	0.00161	J	< 0.3832	u	0.00159	J	< 0.1009	u	< 0.0208	u	< 0.0008	u	0.00208	J	0.00234	J	0.00424	J
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	< 0.0003	u	< 0.0163	u	< 0.0005	u	< 0.0003	u	< 0.0674	u	< 0.0004	u	< 0.0177	u	< 0.0037	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	< 0.0004	u	< 0.0356	u	< 0.0005	u	0.000582	J	< 0.1466	u	< 0.0004	u	< 0.0386	u	< 0.0079	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	0.000962	J
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.00068	u	1.5	v	< 0.00092	u	< 0.00062	u	48	v	< 0.00072	u	1.8	v	2.3	v	0.0013	J	< 0.00091	u	< 0.00107	u	< 0.00097	u
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	4.80E+00	(9)	< 0.0003	u	< 0.0109	u	< 0.0005	u	< 0.0003	u	< 0.0451	u	< 0.0004	u	< 0.0119	u	< 0.0024	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u
4-Isopropyltoluene	-	-	-	-	-	-	< 0.0007	u	< 0.0103	u	< 0.0009	u	< 0.0006	u	0.74	v	< 0.0007	u	< 0.0112	u	< 0.0023	u	< 0.0009	u	< 0.0009	u	< 0.0011	u	< 0.001	u
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	< 0.0007	u	< 0.0251	u	< 0.001	u	< 0.0007	u	< 0.1034	u	< 0.0008	u	< 0.0272	u	< 0.0056	u	< 0.001	u	< 0.001	u	< 0.0012	u	< 0.0011	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	0.0184	v	< 0.1078	u	0.00359	J	0.00792	J	< 0.4444	u	0.00422	J	0.15	J	0.058	J	0.00262	J	0.00766	J	0.0074	J	0.0451	v
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	0.000788	J	< 0.0214	u	0.0159	v	< 0.0004	u	0.2	J	0.018	v	< 0.0233	u	< 0.0048	u	0.026	v	0.00132	J	0.0154	v	0.000909	J
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	< 0.0005	u	< 0.0107	u	< 0.0007	u	< 0.0004	u	< 0.0442	u	< 0.0005	u	< 0.0117	u	< 0.0024	u	< 0.0007	u	< 0.0007	u	< 0.0008	u	< 0.0007	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	< 0.0002	u	< 0.0118	u	< 0.0003	u	< 0.0002	u	< 0.0487	u	< 0.0003	u	< 0.0128	u	< 0.0026	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	< 0.0005	u	< 0.0116	u	< 0.0006	u	< 0.0004	u	< 0.0479	u	< 0.0005	u	< 0.0126	u	< 0.0026	u	< 0.0006	u	< 0.0006	u	< 0.0007	u	< 0.0006	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	< 0.001	u	< 0.0279	u	< 0.0014	u	< 0.0009	u	< 0.115	u	< 0.0011	u	0.12	J	0.026	J	< 0.0014	u	< 0.0014	u	< 0.0016	u	< 0.0015	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	< 0.0008	u	< 0.104	u	< 0.0011	u	< 0.0007	u	< 0.4289	u	< 0.0008	u	< 0.113	u	< 0.0233	u	< 0.0011	u	< 0.0011	u	< 0.0012	u	< 0.0011	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	< 0.0003	u	< 0.0141	u	< 0.0004	u	< 0.0003	u	< 0.058	u	< 0.0003	u	< 0.0153	u	< 0.0031	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	< 0.0002	u	< 0.0111	u	< 0.0002	u	< 0.0002	u	< 0.0459	u	< 0.0002	u	< 0.0121	u	< 0.0025	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	< 0.0018	u	< 0.1119	u	< 0.0024	u	< 0.0016	u	< 0.4614	u	< 0.0019	u	< 0.1215	u	< 0.025	u	< 0.0024	u	< 0.0023	u	< 0.0028	u	< 0.0025	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	< 0.0004	u	< 0.0151	u	< 0.0005	u	< 0.0003	u	< 0.0621	u	< 0.0004	u	< 0.0164	u	< 0.0034	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	< 0.0002	u	< 0.0167	u	< 0.0003	u	< 0.0002	u	< 0.069	u	< 0.0002	u	< 0.0182	u	< 0.0037	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	< 0.0005	u	< 0.0183	u	< 0.0006	u	< 0.0004	u	< 0.0754	u	< 0.0005	u	< 0.0199	u	< 0.0041	u	< 0.0006	u	< 0.0006	u	< 0.0007	u	< 0.0007	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0018	u	< 0.01	u	< 0.0024	u	< 0.0016	u	< 0.0414	u	< 0.0019	u	< 0.0109	u	< 0.0022	u	< 0.0024	u	< 0.0023	u	< 0.0028	u	< 0.0025	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	< 0.0002	u	< 0.0108	u	< 0.0003	u	< 0.0002	u	< 0.0447	u	< 0.0002	u	< 0.0118	u	< 0.0024	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-9 (2-4')		SWMU 10-9 (4-6')		SWMU 10-9 (18-20')		SWMU 10-10 (2-4')		SWMU 10-10 (4-6')		SWMU 10-10 (18-20')		SWMU 10-11 (4-6')		SWMU 10-11 (8-10')		SWMU 10-11 (18-20')		SWMU 10-12 (6-8')		SWMU 10-12 (20-22')		SWMU 10-13 (2-4')	
							1505057-001		1505057-002		1505057-003		1505058-001		1505058-002		1505058-003		1505570-003		1505570-004		1505570-003		1505617-001		1505617-002		1505617-003	
							4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/13/2015	
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	< 0.001	u	< 0.0152	u	< 0.0013	u	< 0.0009	u	< 0.0628	u	< 0.0011	u	< 0.0165	u	< 0.0034	u	< 0.0014	u	< 0.0013	u	< 0.0016	u	< 0.0014	u
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	< 0.0007	u	< 0.0364	u	< 0.001	u	< 0.0007	u	< 0.1499	u	< 0.0008	u	< 0.0395	u	< 0.0081	u	< 0.001	u	< 0.001	u	< 0.0011	u	< 0.001	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	< 0.0003	u	0.04	J	0.00242	v	< 0.0003	u	3.6	v	0.00241	v	0.1	J	0.21	v	0.00371	v	< 0.0004	u	0.00249	J	< 0.0004	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.00035	u	< 0.02007	u	< 0.00047	u	< 0.00032	u	< 0.08276	u	< 0.00037	u	< 0.0218	u	< 0.00448	u	< 0.00048	u	< 0.00047	u	< 0.00055	u	< 0.0005	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	< 0.0004	u	0.016	J	< 0.0005	u	< 0.0004	u	1.2	v	< 0.0004	u	0.04	J	0.077	v	0.000607	J	< 0.0005	u	< 0.0006	u	< 0.0006	u
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	< 0.0007	u	< 0.0204	u	< 0.001	u	< 0.0007	u	< 0.0843	u	< 0.0008	u	< 0.0222	u	< 0.0046	u	< 0.001	u	< 0.001	u	< 0.0012	u	< 0.001	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	0.000438	J	< 0.0578	u	< 0.0006	u	0.00051	J	< 0.2384	u	< 0.0005	u	< 0.0628	u	< 0.0129	u	0.000813	J	< 0.0006	u	< 0.0007	u	0.000685	J
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.00057	u	0.32	v	0.000873	J	< 0.00052	u	11	v	0.000725	J	0.54	v	0.46	v	0.00119	J	< 0.00076	u	< 0.0009	u	< 0.00081	u
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	< 0.0007	u	0.065	J	< 0.001	u	< 0.0007	u	1.4	J	< 0.0008	u	0.063	J	0.098	v	< 0.001	u	< 0.001	u	< 0.0011	u	< 0.001	u
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	< 0.0003	u	0.052	J	< 0.0004	u	< 0.0003	u	1.8	v	0.000372	J	0.057	J	0.12	v	0.00068	J	< 0.0004	u	< 0.0005	u	< 0.0005	u
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	< 0.0004	u	0.021	J	0.000849	J	< 0.0004	u	0.75	v	0.000688	J	< 0.0224	u	0.051	v	0.000947	J	0.000831	J	0.000964	J	< 0.0006	u
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	< 0.0003	u	< 0.0265	u	< 0.0004	u	< 0.0003	u	< 0.1094	u	< 0.0003	u	< 0.0288	u	< 0.0059	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	< 0.0003	u	< 0.0166	u	< 0.0004	u	< 0.0002	u	< 0.0683	u	< 0.0003	u	< 0.018	u	< 0.0037	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	< 0.0003	u	< 0.0125	u	< 0.0005	u	< 0.0003	u	< 0.0516	u	< 0.0004	u	< 0.0136	u	< 0.0028	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	0.000797	J	< 0.0172	u	0.0115	v	0.000255	J	5	v	0.0104	v	0.021	J	0.02	J	0.0162	v	0.00101	J	0.0101	v	0.000885	J
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	< 0.0003	u	< 0.0094	u	< 0.0004	u	< 0.0003	u	< 0.0387	u	< 0.0003	u	< 0.0102	u	< 0.0021	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0002	u	< 0.026	u	< 0.0003	u	< 0.0002	u	< 0.1073	u	< 0.0002	u	< 0.0283	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	< 0.0003	u	< 0.0141	u	< 0.0005	u	< 0.0003	u	< 0.0581	u	< 0.0004	u	< 0.0153	u	< 0.0031	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	< 0.0004	u	< 0.0436	u	< 0.0005	u	< 0.0003	u	< 0.1799	u	< 0.0004	u	< 0.0474	u	< 0.0098	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	< 0.0002	u	< 0.0578	u	< 0.0003	u	< 0.0002	u	< 0.2384	u	< 0.0002	u	< 0.0628	u	< 0.0129	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	< 0.001	u	0.26	J	0.00807	v	< 0.001	u	29	v	0.00797	v	0.73	v	1.7	v	0.0121	v	< 0.0014	u	0.00583	v	< 0.0015	u
Semi-volatiles (mg/kg)																														
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 1.0207	u	< 1.017	u	< 0.1186	u	< 0.2327	u	< 1.2417	u	< 0.1206	u	< 1.1468	u	< 1.2306	u	< 0.1164	u	< 0.1186	u	< 0.1125	u	< 0.1079	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.9537	u	< 0.9502	u	< 0.1108	u	< 0.2175	u	< 1.1602	u	< 0.1126	u	< 1.0716	u	< 1.1499	u	< 0.1087	u	< 0.1108	u	< 0.1051	u	< 0.1009	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.8856	u	< 0.8824	u	< 0.1029	u	< 0.2019	u	< 1.0774	u	< 0.1046	u	< 0.995	u	< 1.0678	u	< 0.101	u	< 0.1029	u	< 0.0976	u	< 0.0937	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 1.0429	u	< 1.0391	u	< 0.1212	u	< 0.2378	u	< 1.2688	u	< 0.1232	u	< 1.1718	u	< 1.2575	u	< 0.1189	u	< 0.1211	u	< 0.1149	u	< 0.1103	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.9242	u	1.1	J	< 0.1074	u	< 0.2107	u	17	v	< 0.1092	u	14	v	3.8	v	< 0.1054	u	< 0.1074	u	< 0.1019	u	< 0.0977	u
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	< 1.162	u	< 1.1577	u	< 0.135	u	< 0.265	u	< 1.4136	u	< 0.1372	u	< 1.3056	u	< 1.401	u	< 0.1325	u	< 0.135	u	< 0.1281	u	< 0.1229	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	< 1.1528	u	< 1.1485	u	< 0.134	u	< 0.2629	u	< 1.4024	u	< 0.1362	u	< 1.2952	u	< 1.3899	u	< 0.1314	u	< 0.1339	u	< 0.127	u	< 0.1219	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	< 0.9971	u	< 0.9934	u	< 0.1159	u	< 0.2274	u	< 1.213	u	< 0.1178	u	< 1.1203	u	< 1.2022	u	< 0.1137	u	< 0.1158	u	< 0.1099	u	< 0.1054	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	< 0.7838	u	< 0.7809	u	< 0.0911	u	< 0.1787	u	< 0.9535	u	< 0.0926	u	< 0.8806	u	< 0.945	u	< 0.0894	u	< 0.091	u	< 0.0864	u	< 0.0829	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	< 0.4143	u	< 0.4128	u	< 0.0481	u	< 0.0945	u	< 0.504	u	< 0.0489	u	< 0.4655	u	< 0.4995	u	< 0.0472	u	< 0.0481	u	< 0.0457	u	< 0.0438	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	< 0.892	u	< 0.8888	u	< 0.1037	u	< 0.2034	u	< 1.0852	u	< 0.1054	u	< 1.0023	u	< 1.0755	u	< 0.1017	u	< 0.1036	u	< 0.0983	u	< 0.0943	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	< 1.1083	u	< 1.1043	u	< 0.1288	u	< 0.2527	u	< 1.3483	u	< 0.1309	u	< 1.2453	u	< 1.3363	u	< 0.1264	u	< 0.1287	u	< 0.1222	u	< 0.1172	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	< 1.0683	u	< 1.0644	u	< 0.1241	u	< 0.2436	u	< 1.2996	u	< 0.1262	u	< 1.2003	u	< 1.288	u	< 0.1218	u	< 0.1241	u	< 0.1177	u	< 0.113	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	< 0.9305	u	< 0.9271	u	< 0.1081	u	< 0.2122	u	< 1.132	u	< 0.1099	u	< 1.0455	u	< 1.1219	u	< 0.1061	u	< 0.1081	u	< 0.1026	u	< 0.0984	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.9125	u	1	J	< 0.106	u	< 0.2081	u	25	v	< 0.1078	u	23	v	5.7	v	< 0.104	u	< 0.106	u	< 0.1006	u	< 0.0965	u
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	< 0.9996	u	< 0.996	u	< 0.1162	u	< 0.2279	u	< 1.2161	u	< 0.1181	u	< 1.1231	u	< 1.2052	u	< 0.114	u	< 0.1161	u	< 0.1102	u	< 0.1057	u
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	< 1.1346	u	< 1.1304	u	< 0.1318	u	< 0.2587	u	< 1.3802	u	< 0.134	u	< 1.2748	u	< 1.368	u	< 0.1294	u	< 0.1318	u	< 0.125	u	< 0.12	u
2-Nitrophenol	-	-	-	-	-	-	< 0.8962	u	< 0.8929	u	< 0.1041	u	< 0.2044	u	< 1.0902	u	< 0.1059	u	< 1.0069	u	< 1.0805	u	< 0.1022	u	< 0.1041	u	< 0.0988	u	< 0.0948	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	< 0.7678	u	< 0.765	u	< 0.0892	u	< 0.1751	u	< 0.934	u	< 0.0907	u	< 0.8627	u	< 0.9257	u	< 0.0875	u	< 0.0892	u	< 0.0846	u	< 0.0812	u
3+4-Methylphenol	-	-	-	-	-	-	< 1.0334	u	< 1.0296	u	< 0.1201	u	< 0.2356	u	< 1.2572	u	< 0.1221	u	< 1.1611	u	< 1.246	u	< 0.1178	u	< 0.12	u	< 0.1139	u	< 0.1093	u
3-Nitroaniline	-	-	-	-	-	-	< 0.9607	u	< 0.9572	u	< 0.1116	u	< 0.2191	u	< 1.1687	u	< 0.1135	u	< 1.0794	u	< 1.1583	u	< 0.1095	u	< 0.1116	u	< 0.1059	u	< 0.1016	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	< 0.5422	u	< 0.5402	u	< 0.063	u	< 0.1236	u	< 0.6596	u	< 0.064	u	< 0.6092	u	< 0.6537	u	< 0.0618	u	< 0.063	u	< 0.0598	u	< 0.0573	u
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 1.0579	u	< 1.054	u	< 0.1229	u	< 0.2412	u	< 1.287	u	< 0.125	u	< 1.1886	u	< 1.2755	u	< 0.1206	u	< 0.1229	u	< 0.1166	u	< 0.1119	u
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 0.9928	u	< 0.9892	u	< 0.1154	u	< 0.2264	u	< 1.2077	u	< 0.1173	u	< 1.1155	u	< 1.197	u	< 0.1132	u	< 0.1153	u	< 0.1094	u	< 0.105	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	< 0.9221	u	< 0.9187	u	< 0.1072	u	< 0.2103	u	< 1.1218	u	< 0.1089	u	< 1.0361	u	< 1.1118	u	< 0.1051	u	< 0.1071	u	< 0.1016	u	< 0.0975	u
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 1.4847	u	< 1.4793	u	< 0.1725	u	< 0.3386	u	< 1.8062	u	< 0.1754	u	< 1.6682	u	< 1.7902	u	< 0.1693	u	< 0.1725	u	< 0.1636	u	< 0.157	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	< 0.8956	u	< 0.8923	u	< 0.1041	u	< 0.2042	u	< 1.0895	u	< 0.1058	u	< 1.0063	u	< 1.0798	u	< 0.1021	u	< 0.104	u	< 0.0987	u	< 0.0947	u
4-Nitrophenol	-	-	-	-	-	-	< 0.8591	u	< 0.8559	u	< 0.0998	u	< 0.1959	u	< 1.0451	u	< 0.1015	u	< 0.9652	u	< 1.0358	u	< 0.0979	u	< 0.0998	u	< 0.0947	u	< 0.0908	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	< 1.215	u	< 1.2106	u	< 0.1412	u	< 0.2771	u	< 1.4781	u	< 0.1435	u	< 1.3652	u	< 1.465	u	< 0.1385	u	< 0.1411	u	< 0.1339	u	< 0.1285	u
Acenaphthylene	-	-	-	-	-	-	< 1.0101	u	< 1.0064	u	< 0.1174	u	< 0.2303	u	< 1.2288	u	< 0.1193	u	< 1.1349	u	< 1.2178	u	< 0.1152	u	< 0.1173	u	< 0.1113	u	< 0.1068	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	< 0.8679	u	< 0.8647	u	< 0.1009	u	< 0.1979	u	< 1.0558	u	< 0.1025	u	< 0.9751	u	< 1.0464	u	< 0.0989	u	< 0.1008	u	< 0.0957	u	< 0.0918	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	< 0.847	u	< 0.8439	u	< 0.0984	u	< 0.1931	u	< 1.0304	u	< 0.1	u	< 0.9516	u	< 1.0212	u	< 0.0966	u	< 0.0984	u	< 0.0933	u	< 0.0896	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	< 1.1178	u	< 1.1137	u	< 0.1299	u	< 0.2549	u	< 1.3598	u	< 0.132	u	< 1.2559	u	< 1.3477	u	< 0.1274	u	< 0.1298	u	< 0.1232	u	< 0.1182	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	< 0.7837	u	< 0.7808	u	< 0.0911	u	< 0.1787	u	< 0.9534	u	< 0.0926	u	< 0.8805	u	< 0.9449	u	< 0.0893	u	< 0.091	u	< 0.0864	u	< 0.0829	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	< 1.119	u	< 1.1149	u	< 0.13	u	< 0.2552	u	< 1.3613	u	< 0.1322	u	< 1.2573	u	< 1.3492	u	< 0.1276	u	< 0.13	u	< 0.1233	u	< 0.1183	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	< 0.9468	u	< 0.9434	u	< 0.11	u	< 0.2159	u	< 1.1518	u	< 0.1118	u	< 1.0638	u	< 1.1416	u	< 0.1079	u	< 0.11	u	< 0.1044	u	< 0.1001	u
Benzo(g,h,i)perylene	-	-	-	-	-	-	< 1.1347	u	< 1.1305	u	< 0.1318	u	< 0.2587	u	< 1.3803	u	< 0.134	u	< 1.2749	u	< 1.3681	u	< 0.1294	u	< 0.1318	u	< 0.1251	u	< 0.12	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	< 1.1268	u	< 1.1227	u	< 0.1309	u	< 0.2569	u	< 1.3708	u	< 0.1331	u	< 1.2661	u	< 1.3586	u	< 0.1285	u	< 0.1309	u	< 0.1242	u	< 0.1192	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	< 0.5681	u	< 0.5661	u	< 0.066	u	< 0.1295	u	< 0.6912	u	< 0.0671	u	< 0.6383	u	< 0.685	u	< 0.0648	u	< 0.066	u	< 0.0626	u	< 0.0601	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	< 0.8857	u	< 0.8824	u	< 0.1029	u	< 0.202	u	< 1.0774	u	< 0.1046	u	< 0.9951	u	< 1.0679	u	< 0.101	u	< 0.1029	u	< 0.0976	u	< 0.0937	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	< 0.9516	u	< 0.9482	u	< 0.1106	u	< 0.217	u	< 1.1577	u	< 0.1124	u	< 1.0692	u	< 1.1474	u	< 0.1085	u	< 0.1105	u	< 0.1049	u	< 0.1006	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	< 0.9852	u	< 0.9816	u	< 0.1145	u	< 0.2247	u	< 1.1986	u	< 0.1164	u	< 1.107	u	< 1.1879	u	< 0.1123	u	< 0.1144	u	< 0.1086	u	< 0.1042	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-9 (2-4')		SWMU 10-9 (4-6')		SWMU 10-9 (18-20')		SWMU 10-10 (2-4')		SWMU 10-10 (4-6')		SWMU 10-10 (18-20')		SWMU 10-11 (4-6')		SWMU 10-11 (8-10')		SWMU 10-11 (18-20')		SWMU 10-12 (6-8')		SWMU 10-12 (20-22')		SWMU 10-13 (2-4')	
							1505057-001		1505057-002		1505057-003		1505058-001		1505058-002		1505058-003		1505570-003		1505570-004		1505570-003		1505617-001		1505617-002		1505617-003	
							4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/13/2015	
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	< 0.7617	u	< 0.759	u	< 0.0885	u	< 0.1737	u	< 0.9267	u	< 0.09	u	< 0.8559	u	< 0.9184	u	< 0.0868	u	< 0.0885	u	< 0.084	u	< 0.0806	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	1.5	J	< 1.1161	u	< 0.1302	u	< 0.2554	u	< 1.3628	u	< 0.1323	u	< 1.2586	u	< 1.3506	u	< 0.1277	u	< 0.1301	u	< 0.1235	u	< 0.1185	u
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	< 1.2173	u	< 1.2128	u	< 0.1414	u	< 0.2776	u	< 1.4808	u	< 0.1438	u	< 1.3677	u	< 1.4677	u	< 0.1388	u	< 0.1414	u	< 0.1342	u	< 0.1287	u
Carbazole	-	-	-	-	-	-	< 0.9286	u	< 0.9253	u	< 0.1079	u	< 0.2118	u	< 1.1297	u	< 0.1097	u	< 1.0434	u	< 1.1197	u	< 0.1059	u	< 0.1079	u	< 0.1023	u	< 0.0982	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	< 1.0012	u	< 0.9976	u	< 0.1163	u	< 0.2283	u	< 1.218	u	< 0.1183	u	< 1.1249	u	< 1.2072	u	< 0.1141	u	< 0.1163	u	< 0.1103	u	< 0.1059	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	< 1.0802	u	< 1.0763	u	< 0.1255	u	< 0.2463	u	< 1.3141	u	< 0.1276	u	< 1.2137	u	< 1.3025	u	< 0.1232	u	< 0.1255	u	< 0.1191	u	< 0.1142	u
Dibenzofuran	-	-	-	-	-	-	< 1.0664	u	< 1.0625	u	< 0.1239	u	< 0.2432	u	< 1.2973	u	< 0.126	u	< 1.1981	u	< 1.2857	u	< 0.1216	u	< 0.1239	u	< 0.1175	u	< 0.1128	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	< 1.1316	u	< 1.1275	u	< 0.1315	u	< 0.258	u	< 1.3766	u	< 0.1337	u	< 1.2714	u	< 1.3644	u	< 0.129	u	< 0.1314	u	< 0.1247	u	< 0.1197	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	< 0.9176	u	< 0.9143	u	< 0.1066	u	< 0.2092	u	< 1.1163	u	< 0.1084	u	< 1.031	u	< 1.1064	u	< 0.1046	u	< 0.1066	u	< 0.1011	u	< 0.097	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	< 1.1276	u	< 1.1235	u	< 0.131	u	< 0.2571	u	< 1.3718	u	< 0.1332	u	< 1.267	u	< 1.3596	u	< 0.1286	u	< 0.131	u	< 0.1243	u	< 0.1192	u
Di-n-octyl phthalate	-	-	-	-	-	-	< 1.11	u	< 1.1059	u	< 0.129	u	< 0.2531	u	< 1.3503	u	< 0.1311	u	< 1.2472	u	< 1.3383	u	< 0.1266	u	< 0.1289	u	< 0.1223	u	< 0.1174	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	< 1.2099	u	< 1.2055	u	< 0.1406	u	< 0.2759	u	< 1.4719	u	< 0.1429	u	< 1.3595	u	< 1.4588	u	< 0.1379	u	< 0.1405	u	< 0.1334	u	< 0.128	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	< 1.3574	u	< 1.3524	u	< 0.1577	u	< 0.3095	u	2.2	J	< 0.1603	u	1.8	J	< 1.6366	u	< 0.1548	u	< 0.1577	u	< 0.1496	u	< 0.1435	u
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	< 0.9411	u	< 0.9376	u	< 0.1094	u	< 0.2146	u	< 1.1448	u	< 0.1112	u	< 1.0574	u	< 1.1347	u	< 0.1073	u	< 0.1093	u	< 0.1037	u	< 0.0995	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.9865	u	< 0.9829	u	< 0.1146	u	< 0.2249	u	< 1.2001	u	< 0.1165	u	< 1.1084	u	< 1.1894	u	< 0.1125	u	< 0.1146	u	< 0.1087	u	< 0.1043	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	< 0.6916	u	< 0.6891	u	< 0.0804	u	< 0.1577	u	< 0.8413	u	< 0.0817	u	< 0.777	u	< 0.8339	u	< 0.0788	u	< 0.0803	u	< 0.0762	u	< 0.0731	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	< 0.8875	u	< 0.8843	u	< 0.1031	u	< 0.2024	u	< 1.0797	u	< 0.1048	u	< 0.9972	u	< 1.0701	u	< 0.1012	u	< 0.1031	u	< 0.0978	u	< 0.0939	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	< 1.1331	u	< 1.129	u	< 0.1317	u	< 0.2584	u	< 1.3785	u	< 0.1338	u	< 1.2731	u	< 1.3662	u	< 0.1292	u	< 0.1316	u	< 0.1249	u	< 0.1198	u
Isophorone	5.61E+03	(1)	2.70E+04	(4)	4.22E+00	(8)	< 1.0631	u	< 1.0592	u	< 0.1235	u	< 0.2424	u	< 1.2933	u	< 0.1256	u	< 1.1944	u	< 1.2817	u	< 0.1212	u	< 0.1235	u	< 0.1172	u	< 0.1124	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.9487	u	< 0.9453	u	< 0.1102	u	< 0.2163	u	5.9	v	< 0.1121	u	5.3	v	1.2	J	< 0.1082	u	< 0.1102	u	< 0.1046	u	< 0.1003	u
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	< 1.0266	u	< 1.0228	u	< 0.1193	u	< 0.2341	u	< 1.2489	u	< 0.1213	u	< 1.1534	u	< 1.2378	u	< 0.117	u	< 0.1192	u	< 0.1131	u	< 0.1086	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	< 1.0335	u	< 1.0297	u	< 0.1201	u	< 0.2357	u	< 1.2573	u	< 0.1221	u	< 1.1612	u	< 1.2461	u	< 0.1178	u	< 0.12	u	< 0.1139	u	< 0.1093	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	< 0.8927	u	< 0.8894	u	< 0.1037	u	< 0.2036	u	< 1.086	u	< 0.1054	u	< 1.003	u	< 1.0763	u	< 0.1018	u	< 0.1037	u	< 0.0984	u	< 0.0944	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	< 0.6225	u	< 0.6203	u	< 0.0723	u	< 0.142	u	< 0.7573	u	< 0.0735	u	< 0.6995	u	< 0.7506	u	< 0.071	u	< 0.0723	u	< 0.0686	u	< 0.0658	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	< 1.0431	u	< 1.0393	u	< 0.1212	u	< 0.2379	u	4.1	v	< 0.1232	u	3.6	v	< 1.2577	u	< 0.1189	u	< 0.1212	u	< 0.115	u	< 0.1103	u
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	< 0.8936	u	< 0.8903	u	< 0.1038	u	< 0.2038	u	< 1.0871	u	< 0.1055	u	< 1.004	u	< 1.0774	u	< 0.1019	u	< 0.1038	u	< 0.0985	u	< 0.0945	u
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	< 1.2868	u	< 1.2822	u	< 0.1495	u	< 0.2934	u	< 1.5655	u	< 0.152	u	< 1.4459	u	< 1.5516	u	< 0.1467	u	< 0.1495	u	< 0.1418	u	< 0.1361	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	< 0.8378	u	< 0.8348	u	< 0.0974	u	< 0.191	u	< 1.0193	u	< 0.099	u	< 0.9414	u	< 1.0102	u	< 0.0955	u	< 0.0973	u	< 0.0923	u	< 0.0886	u
Total Petroleum Hydrocarbons (mg/kg)																														
Gasoline Range Organics (GRO)	-		-		-		< 1	u	12	J	< 1	u	< 1	u	560	v	< 1	u	40	v	68	v	< 1	u	< 1	u	2.4	J	< 1	u
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-		210	v	300	v	< 6.2	u	59	v	**8900**	v	< 5	u	**3800**	v	870	v	< 6.4	u	< 5	u	< 6	u	< 5	u
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-		170	v	120	v	< 56	u	98	v	**1600**	v	< 50	u	680	v	280	v	< 58	u	< 50	u	< 50	u	< 48	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 461
(9) SoilGW Risk-based EPA DAF = 461
(10) SoilGW MCL-based EPA DAF = 461
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-13 (6-8')		SWMU 10-13 (18-20')		SWMU 10-14 (6-8')		SWMU 10-14 (21-23')		SWMU 10-15 (2-4')		SWMU 10-15 (4-6')		SWMU 10-15 (18-20')		SWMU 10-16 (2-4')		SWMU 10-16 (4-5.5')		SWMU 10-16 (8-9')		SWMU 10-17 (6-8')	
							1505617-004		1505617-005		1505570-001		1505570-002		1505617-006		1505617-007		1505617-008		1505705-001		1505705-002		1505705-003		1505617-009	
							5/13/2015		5/13/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015	
Metals (mg/kg)																												
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	< 3.1409	u	< 2.8483	u	< 3.0545	u	< 7.0836	u	< 1.6215	u	< 1.4891	u	< 2.8183	u	< 1.4809	u	< 1.4396	u	< 1.4877	u	< 3.0564	u
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	1.3	J	1.2	J	0.87	J	1.1	J	1.1	J	1.3	J	2.1	J	1.8	J	1.4	J	1.3	J	1.5	J
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	200	v	110	v	160	v	220	v	52	v	120	v	850	v	500	v	430	v	55	v	200	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	1.2	v	1.1	v	0.78	v	0.79	v	1	v	1	v	1	v	0.79	v	0.73	v	0.78	v	1	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	< 0.0332	u	< 0.0301	u	< 0.0322	u	< 0.0299	u	< 0.0342	u	< 0.0314	u	< 0.0297	u	< 0.0313	u	< 0.0304	u	< 0.0314	u	< 0.0323	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	11	v	15	v	7	v	8.9	v	9.2	v	9.1	v	13	v	9.3	v	8.8	v	10	v	11	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	9.68E-02	(8)	< 2.3615	u	< 2.1997	u	< 2.2523	u	< 2.2093	u	< 2.3898	u	< 2.3405	u	< 2.1714	u	< 0.7191	u	< 0.7103	u	< 0.7148	u	< 2.2901	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	5.9	v	6.3	v	4.5	v	5	v	4.7	v	4.6	v	7.4	v	4.4	v	4.2	v	5.7	v	5.3	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	< 0.2952	u	< 0.275	u	< 0.2815	u	< 0.2762	u	< 0.2987	u	< 0.2926	u	< 0.2714	u	< 0.0438	u	< 0.0433	u	< 0.0436	u	< 0.2863	u
Iron	5.50E+04	(2)	8.20E+05	(6)	7.00E+03	(9)	18000	v	23000	v	11000	v	15000	v	15000	v	17000	v	20000	v	15000	v	15000	v	17000	v	16000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	5.2	v	2.3	v	3.6	v	3.6	v	5.1	v	3.7	v	1.8	v	2.9	v	3	v	3.3	v	4.4	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	5.60E+02	(9)	190	v	430	v	430	v	410	v	490	v	200	v	980	v	460	v	240	v	810	v	210	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	< 0.0034	u	< 0.0031	u	0.0046	J	0.0032	J	< 0.0033	u	< 0.0032	u	< 0.0031	u	0.0048	J	0.0037	J	0.0054	J	< 0.0031	u
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	11	v	15	v	7.1	v	11	v	8.7	v	8.3	v	15	v	7.7	v	7.2	v	10	v	9.6	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E+01	(8)	< 1.8287	u	< 1.6583	u	< 1.7784	u	< 1.6497	u	< 1.8882	u	< 1.734	u	< 1.6409	u	< 1.7245	u	< 1.6763	u	< 1.7324	u	< 1.7795	u
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	< 0.0355	u	< 0.0322	u	< 0.0346	u	< 0.0321	u	< 0.0367	u	< 0.0337	u	< 0.0319	u	< 0.0335	u	< 0.0326	u	< 0.0337	u	< 0.0346	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	19	v	15	v	13	v	7.3	v	17	v	15	v	21	v	21	v	22	v	20	v	19	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	17	v	21	v	14	v	16	v	15	v	15	v	23	v	15	v	14	v	18	v	17	v
Volatiles (mg/kg)																												
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	< 0.0028	u	< 0.0004	u	< 0.0023	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.052	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	< 0.0051	u	< 0.0003	u	< 0.0043	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0964	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	< 0.0409	u	< 0.0005	u	< 0.0034	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0769	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	< 0.0041	u	< 0.0023	u	< 0.0034	u	< 0.0022	u	< 0.0019	u	< 0.0017	u	< 0.0022	u	< 0.0021	u	< 0.0019	u	< 0.0018	u	< 0.0763	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	< 0.0135	u	< 0.0005	u	< 0.0113	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.2539	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	< 0.0023	u	< 0.0004	u	< 0.002	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0437	u
1,1-Dichloropropene	-	-	-	-	-	-	< 0.005	u	< 0.0004	u	< 0.0042	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0945	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	< 0.072	u	< 0.0008	u	< 0.006	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0007	u	< 0.1355	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	< 0.0566	u	< 0.0008	u	< 0.0048	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.0007	u	< 0.0006	u	< 0.1065	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.06224	u	< 0.00084	u	< 0.00522	u	< 0.00082	u	< 0.00071	u	< 0.00064	u	< 0.00083	u	< 0.00077	u	< 0.00071	u	< 0.00067	u	< 0.11712	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	5.2	v	0.0023	v	< 0.0014	u	0.00376	v	< 0.0005	u	< 0.0004	u	0.00497	v	< 0.0005	u	< 0.0005	u	0.00269	v	27	v
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	< 0.0579	u	< 0.0007	u	< 0.0049	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0007	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.109	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	< 0.0027	u	< 0.0003	u	< 0.0023	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0506	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.02034	u	< 0.0005	u	< 0.0017	u	< 0.00049	u	< 0.00042	u	< 0.00037	u	< 0.00049	u	< 0.00045	u	< 0.00042	u	< 0.00039	u	< 0.03828	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	< 0.0135	u	< 0.0006	u	< 0.0113	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.2539	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	< 0.0019	u	< 0.0005	u	< 0.0016	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0355	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	1.9	v	0.00154	J	< 0.0019	u	0.00233	v	< 0.0003	u	< 0.0003	u	0.00318	v	< 0.0004	u	< 0.0003	u	0.0017	J	10	v
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.03972	u	< 0.00038	u	< 0.00333	u	< 0.00037	u	< 0.00032	u	< 0.00028	u	< 0.00037	u	< 0.00035	u	< 0.00032	u	< 0.0003	u	< 0.07473	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	< 0.0046	u	< 0.0004	u	< 0.0039	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0874	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.04201	u	< 0.00035	u	< 0.00352	u	< 0.00034	u	< 0.0003	u	< 0.00026	u	< 0.00034	u	< 0.00032	u	< 0.00029	u	< 0.00028	u	< 0.07905	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	11	v	< 0.00088	u	< 0.01699	u	< 0.00086	u	< 0.00075	u	< 0.00067	u	< 0.00087	u	< 0.00081	u	< 0.00075	u	< 0.0007	u	48	v
2,2-Dichloropropane	-	-	-	-	-	-	< 0.0049	u	< 0.0004	u	< 0.0041	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0924	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	< 0.0217	u	0.00181	J	< 0.0182	u	< 0.0007	u	< 0.0006	u	0.00114	J	0.00227	J	0.00304	J	0.00146	J	0.00173	J	< 0.4081	u
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	< 0.0381	u	< 0.0004	u	< 0.0032	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0717	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	< 0.0083	u	< 0.0005	u	< 0.007	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	0.000787	J	0.000669	J	< 0.0004	u	< 0.1561	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	20	v	< 0.00088	u	< 0.01863	u	< 0.00086	u	< 0.00074	u	< 0.00066	u	< 0.00086	u	< 0.0008	u	< 0.00074	u	< 0.0007	u	87	v
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	4.80E+00	(9)	< 0.0255	u	< 0.0004	u	< 0.0021	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.048	u
4-Isopropyltoluene	-	-	-	-	-	-	0.37	v	< 0.0009	u	< 0.002	u	< 0.0009	u	< 0.0007	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0007	u	1.6	v
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	< 0.0059	u	< 0.001	u	< 0.0049	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.0009	u	< 0.0008	u	< 0.0008	u	< 0.1101	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	< 0.0252	u	0.00217	J	0.0054	J	0.00282	J	0.00666	J	0.0032	J	0.00238	J	0.0254	v	0.00651	J	0.00313	J	< 0.4733	u
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	< 0.005	u	0.0194	v	< 0.0042	u	0.0224	v	0.00119	J	0.00144	J	0.0292	v	0.00112	J	0.00221	v	0.0176	v	1.9	v
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	< 0.025	u	< 0.0006	u	< 0.0021	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0471	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	< 0.0028	u	< 0.0003	u	< 0.0023	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0519	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	< 0.0271	u	< 0.0006	u	< 0.0023	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.051	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	0.023	J	< 0.0013	u	0.023	J	< 0.0013	u	< 0.0011	u	< 0.001	u	< 0.0013	u	< 0.0012	u	< 0.0011	u	< 0.0011	u	< 0.1225	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	< 0.0243	u	< 0.001	u	< 0.0204	u	< 0.001	u	0.000968	J	< 0.0008	u	< 0.001	u	< 0.0009	u	< 0.0009	u	< 0.0008	u	< 0.4567	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	< 0.0033	u	< 0.0004	u	< 0.0028	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0618	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	< 0.0026	u	< 0.0002	u	< 0.0022	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0489	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	< 0.0261	u	< 0.0023	u	< 0.0219	u	< 0.0022	u	< 0.0019	u	< 0.0017	u	< 0.0022	u	< 0.0021	u	< 0.0019	u	< 0.0018	u	< 0.4913	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	< 0.0035	u	< 0.0005	u	< 0.003	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0662	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	< 0.0039	u	< 0.0003	u	< 0.0033	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0735	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	< 0.0043	u	< 0.0006	u	< 0.0036	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0803	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0023	u	< 0.0023	u	< 0.002	u	< 0.0022	u	< 0.0019	u	< 0.0017	u	< 0.0022	u	< 0.0021	u	< 0.0019	u	< 0.0018	u	< 0.044	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	< 0.0025	u	< 0.0003	u	< 0.0021	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0476	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-13 (6-8')		SWMU 10-13 (18-20')		SWMU 10-14 (6-8')		SWMU 10-14 (21-23')		SWMU 10-15 (2-4')		SWMU 10-15 (4-6')		SWMU 10-15 (18-20')		SWMU 10-16 (2-4')		SWMU 10-16 (4-5.5')		SWMU 10-16 (8-9')		SWMU 10-17 (6-8')	
							1505617-004		1505617-005		1505570-001		1505570-002		1505617-006		1505617-007		1505617-008		1505705-001		1505705-002		1505705-003		1505617-009	
							5/13/2015		5/13/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015	
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	< 0.0036	u	< 0.0013	u	< 0.003	u	< 0.0013	u	< 0.0011	u	< 0.001	u	< 0.0013	u	< 0.0012	u	< 0.0011	u	< 0.001	u	< 0.0668	u
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	< 0.0085	u	< 0.0009	u	< 0.0071	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.1596	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	1.3	v	0.00216	J	< 0.0026	u	0.00331	v	0.000345	J	0.000367	J	0.00472	v	< 0.0003	u	0.000401	J	0.00347	v	11	v
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.04684	u	< 0.00045	u	< 0.00393	u	< 0.00044	u	< 0.00038	u	< 0.00034	u	< 0.00044	u	< 0.00041	u	< 0.00038	u	< 0.00036	u	< 0.08814	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	0.67	v	< 0.0005	u	< 0.0024	u	0.000543	J	< 0.0004	u	< 0.0004	u	0.000689	J	< 0.0005	u	< 0.0004	u	0.000539	J	3.1	v
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	< 0.0048	u	< 0.0009	u	< 0.004	u	< 0.0009	u	0.00478	v	0.00936	v	< 0.0009	u	< 0.0009	u	< 0.0008	u	< 0.0008	u	< 0.0898	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	< 0.0135	u	0.000655	J	< 0.0113	u	< 0.0005	u	0.000498	J	< 0.0004	u	< 0.0005	u	< 0.0005	u	0.000506	J	0.000611	J	< 0.2539	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	3.8	v	0.000791	J	< 0.00674	u	0.00101	J	< 0.00062	u	< 0.00055	u	0.00109	J	< 0.00067	u	< 0.00062	u	0.000845	J	20	v
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	0.58	J	< 0.0009	u	< 0.0024	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	2.8	v
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	0.86	v	< 0.0004	u	< 0.0021	u	0.000587	J	< 0.0004	u	< 0.0003	u	0.000889	J	< 0.0004	u	< 0.0004	u	0.000494	J	5.2	v
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	0.36	v	0.000813	J	0.0097	J	0.000853	J	0.000632	J	0.000564	J	0.000889	J	< 0.0005	u	< 0.0005	u	0.000683	J	1.8	v
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	< 0.0062	u	< 0.0004	u	< 0.0052	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.1165	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	< 0.0386	u	< 0.0003	u	< 0.0032	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0727	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	< 0.0029	u	< 0.0004	u	< 0.0025	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.055	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	0.11	v	0.00936	v	< 0.0034	u	0.0147	v	0.00109	J	0.0012	J	0.0204	v	0.00104	J	0.00151	J	0.0135	v	34	v
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	< 0.0022	u	< 0.0004	u	< 0.0018	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0412	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0061	u	< 0.0003	u	< 0.0051	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.1143	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	< 0.0033	u	< 0.0004	u	< 0.0028	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0618	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	< 0.0102	u	< 0.0005	u	< 0.0086	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.1916	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	< 0.0135	u	< 0.0003	u	< 0.0113	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.2539	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	5	v	0.00769	v	< 0.0079	u	0.0115	v	0.00141	J	0.00123	J	0.0155	v	< 0.0012	u	< 0.0011	u	0.00946	v	86	v
Semi-volatiles (mg/kg)																												
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.1208	u	< 0.1121	u	< 0.1148	u	< 0.1127	u	< 0.1216	u	< 0.12	u	< 0.1103	u	< 0.1145	u	< 0.1129	u	< 0.1144	u	< 1.1687	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.1128	u	< 0.1048	u	< 0.1072	u	< 0.1053	u	< 0.1136	u	< 0.1121	u	< 0.103	u	< 0.107	u	< 0.1055	u	< 0.1069	u	< 1.0921	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.1048	u	< 0.0973	u	< 0.0996	u	< 0.0978	u	< 0.1055	u	< 0.1041	u	< 0.0957	u	< 0.0994	u	< 0.098	u	< 0.0992	u	< 1.0141	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.1234	u	< 0.1146	u	< 0.1173	u	< 0.1152	u	< 0.1242	u	< 0.1226	u	< 0.1127	u	< 0.117	u	< 0.1154	u	< 0.1169	u	< 1.1942	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	12	v	< 0.1015	u	< 0.1039	u	< 0.1021	u	< 0.1101	u	< 0.1087	u	< 0.0998	u	< 0.1037	u	< 0.1023	u	< 0.1036	u	76	v
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	< 0.1375	u	< 0.1277	u	< 0.1306	u	< 0.1283	u	< 0.1384	u	< 0.1366	u	< 0.1255	u	< 0.1304	u	< 0.1286	u	< 0.1302	u	< 1.3305	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	< 0.1364	u	< 0.1267	u	< 0.1296	u	< 0.1273	u	< 0.1373	u	< 0.1355	u	< 0.1245	u	< 0.1293	u	< 0.1275	u	< 0.1292	u	< 1.32	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	< 0.118	u	< 0.1096	u	< 0.1121	u	< 0.1101	u	< 0.1187	u	< 0.1172	u	< 0.1077	u	< 0.1119	u	< 0.1103	u	< 0.1117	u	< 1.1417	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	< 0.0927	u	< 0.0861	u	< 0.0881	u	< 0.0865	u	< 0.0933	u	< 0.0922	u	< 0.0847	u	< 0.0879	u	< 0.0867	u	< 0.0878	u	36	v
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	< 0.049	u	< 0.0455	u	< 0.0466	u	< 0.0458	u	< 0.0493	u	< 0.0487	u	< 0.0448	u	< 0.0465	u	< 0.0458	u	< 0.0464	u	< 0.4744	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	< 0.1055	u	< 0.098	u	< 0.1003	u	< 0.0985	u	< 0.1062	u	< 0.1049	u	< 0.0964	u	< 0.1001	u	< 0.0987	u	< 0.1	u	< 1.0214	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	< 0.1311	u	< 0.1218	u	< 0.1246	u	< 0.1224	u	< 0.132	u	< 0.1303	u	< 0.1197	u	< 0.1244	u	< 0.1226	u	< 0.1242	u	< 1.2691	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	< 0.1264	u	< 0.1174	u	< 0.1201	u	< 0.118	u	< 0.1272	u	< 0.1256	u	< 0.1154	u	< 0.1199	u	< 0.1182	u	< 0.1197	u	< 1.2232	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	< 0.1101	u	< 0.1022	u	< 0.1046	u	< 0.1028	u	< 0.1108	u	< 0.1094	u	< 0.1005	u	< 0.1044	u	< 0.103	u	< 0.1043	u	< 1.0655	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	21	v	< 0.1003	u	< 0.1026	u	< 0.1008	u	< 0.1087	u	< 0.1073	u	< 0.0986	u	< 0.1024	u	< 0.101	u	< 0.1023	u	130	v
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	2.2	v	< 0.1098	u	< 0.1124	u	< 0.1104	u	< 0.119	u	< 0.1175	u	< 0.108	u	< 0.1122	u	< 0.1106	u	< 0.112	u	56	v
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	< 0.1342	u	< 0.1247	u	< 0.1276	u	< 0.1253	u	< 0.1351	u	< 0.1334	u	< 0.1226	u	< 0.1273	u	< 0.1255	u	< 0.1271	u	< 1.2991	u
2-Nitrophenol	-	-	-	-	-	-	< 0.106	u	< 0.0985	u	< 0.1008	u	< 0.099	u	< 0.1067	u	< 0.1054	u	< 0.0968	u	< 0.1006	u	< 0.0992	u	< 0.1004	u	< 1.0262	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	< 0.0908	u	< 0.0844	u	< 0.0863	u	< 0.0848	u	< 0.0914	u	< 0.0903	u	< 0.0829	u	< 0.0862	u	< 0.085	u	< 0.086	u	< 0.8792	u
3+4-Methylphenol	-	-	-	-	-	-	0.79	v	< 0.1135	u	< 0.1162	u	< 0.1141	u	< 0.1231	u	< 0.1215	u	< 0.1116	u	< 0.116	u	< 0.1143	u	< 0.1158	u	100	v
3-Nitroaniline	-	-	-	-	-	-	< 0.1137	u	< 0.1056	u	< 0.108	u	< 0.1061	u	< 0.1144	u	< 0.113	u	< 0.1038	u	< 0.1078	u	< 0.1063	u	< 0.1077	u	< 1.1	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	< 0.0641	u	< 0.0596	u	< 0.061	u	< 0.0599	u	< 0.0646	u	< 0.0637	u	< 0.0586	u	< 0.0608	u	< 0.06	u	< 0.0608	u	< 0.6208	u
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 0.1252	u	< 0.1162	u	< 0.1189	u	< 0.1168	u	< 0.126	u	< 0.1244	u	< 0.1143	u	< 0.1187	u	< 0.1171	u	< 0.1185	u	< 1.2113	u
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 0.1175	u	< 0.1091	u	< 0.1116	u	< 0.1096	u	< 0.1182	u	< 0.1167	u	< 0.1073	u	< 0.1114	u	< 0.1098	u	< 0.1113	u	< 1.1368	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	< 0.1091	u	< 0.1013	u	< 0.1037	u	< 0.1018	u	< 0.1098	u	< 0.1084	u	< 0.0996	u	< 0.1035	u	< 0.102	u	< 0.1033	u	< 1.0559	u
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 0.1757	u	< 0.1631	u	< 0.1669	u	< 0.164	u	< 0.1768	u	< 0.1746	u	< 0.1604	u	< 0.1666	u	< 0.1643	u	< 0.1664	u	< 1.7001	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	< 0.106	u	< 0.0984	u	< 0.1007	u	< 0.0989	u	< 0.1067	u	< 0.1053	u	< 0.0968	u	< 0.1005	u	< 0.0991	u	< 0.1004	u	< 1.0255	u
4-Nitrophenol	-	-	-	-	-	-	< 0.1016	u	< 0.0944	u	< 0.0966	u	< 0.0949	u	< 0.1023	u	< 0.101	u	< 0.0928	u	< 0.0964	u	< 0.0951	u	< 0.0963	u	< 0.9837	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	< 0.1438	u	< 0.1335	u	< 0.1366	u	< 0.1342	u	< 0.1447	u	< 0.1429	u	< 0.1313	u	< 0.1363	u	< 0.1344	u	< 0.1362	u	< 1.3913	u
Acenaphthylene	-	-	-	-	-	-	< 0.1195	u	< 0.111	u	< 0.1136	u	< 0.1115	u	< 0.1203	u	< 0.1188	u	< 0.1091	u	< 0.1133	u	< 0.1118	u	< 0.1132	u	< 1.1566	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	< 0.1027	u	< 0.0954	u	< 0.0976	u	< 0.0958	u	< 0.1034	u	< 0.102	u	< 0.0938	u	< 0.0974	u	< 0.096	u	< 0.0973	u	< 0.9938	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	< 0.1002	u	< 0.0931	u	< 0.0952	u	< 0.0935	u	< 0.1009	u	< 0.0996	u	< 0.0915	u	< 0.095	u	< 0.0937	u	< 0.0949	u	< 0.9698	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	< 0.1322	u	< 0.1228	u	< 0.1257	u	< 0.1234	u	< 0.1331	u	< 0.1314	u	< 0.1208	u	< 0.1254	u	< 0.1237	u	< 0.1253	u	< 1.2799	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	< 0.0927	u	< 0.0861	u	< 0.0881	u	< 0.0865	u	< 0.0933	u	< 0.0921	u	< 0.0847	u	< 0.0879	u	< 0.0867	u	< 0.0878	u	< 0.8973	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	< 0.1324	u	< 0.1229	u	< 0.1258	u	< 0.1236	u	< 0.1333	u	< 0.1316	u	< 0.1209	u	< 0.1256	u	< 0.1238	u	< 0.1254	u	< 1.2813	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	< 0.112	u	< 0.104	u	< 0.1064	u	< 0.1046	u	< 0.1128	u	< 0.1113	u	< 0.1023	u	< 0.1062	u	< 0.1048	u	< 0.1061	u	< 1.0842	u
Benzo(g,h,i)perylene	-	-	-	-	-	-	< 0.1342	u	< 0.1247	u	< 0.1276	u	< 0.1253	u	< 0.1351	u	< 0.1334	u	< 0.1226	u	< 0.1273	u	< 0.1255	u	< 0.1272	u	< 1.2992	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	< 0.1333	u	< 0.1238	u	< 0.1267	u	< 0.1244	u	< 0.1342	u	< 0.1325	u	< 0.1217	u	< 0.1264	u	< 0.1247	u	< 0.1263	u	< 1.2902	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	< 0.0672	u	< 0.0624	u	< 0.0639	u	< 0.0627	u	< 0.0677	u	< 0.0668	u	< 0.0614	u	< 0.0638	u	< 0.0629	u	< 0.0637	u	< 0.6505	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	< 0.1048	u	< 0.0973	u	< 0.0996	u	< 0.0978	u	< 0.1055	u	< 0.1041	u	< 0.0957	u	< 0.0994	u	< 0.098	u	< 0.0992	u	< 1.0141	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	< 0.1126	u	< 0.1046	u	< 0.107	u	< 0.1051	u	< 0.1133	u	< 0.1119	u	< 0.1028	u	< 0.1068	u	< 0.1053	u	< 0.1066	u	< 1.0897	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	< 0.1166	u	< 0.1082	u	< 0.1108	u	< 0.1088	u	< 0.1173	u	< 0.1158	u	< 0.1064	u	< 0.1105	u	< 0.109	u	< 0.1104	u	< 1.1281	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-13 (6-8')		SWMU 10-13 (18-20')		SWMU 10-14 (6-8')		SWMU 10-14 (21-23')		SWMU 10-15 (2-4')		SWMU 10-15 (4-6')		SWMU 10-15 (18-20')		SWMU 10-16 (2-4')		SWMU 10-16 (4-5.5')		SWMU 10-16 (8-9')		SWMU 10-17 (6-8')	
							1505617-004		1505617-005		1505570-001		1505570-002		1505617-006		1505617-007		1505617-008		1505705-001		1505705-002		1505705-003		1505617-009	
							5/13/2015		5/13/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015	
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	< 0.0901	u	< 0.0837	u	< 0.0856	u	< 0.0841	u	< 0.0907	u	< 0.0896	u	< 0.0823	u	< 0.0855	u	< 0.0843	u	< 0.0854	u	< 0.8722	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	< 0.1325	u	< 0.1231	u	< 0.1259	u	< 0.1237	u	< 0.1334	u	< 0.1317	u	< 0.121	u	< 0.1257	u	< 0.1239	u	< 0.1255	u	< 1.2827	u
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	< 0.144	u	< 0.1337	u	< 0.1369	u	< 0.1344	u	< 0.145	u	< 0.1431	u	< 0.1315	u	< 0.1366	u	< 0.1347	u	< 0.1364	u	< 1.3938	u
Carbazole	-	-	-	-	-	-	< 0.1099	u	< 0.102	u	< 0.1044	u	< 0.1025	u	< 0.1106	u	< 0.1092	u	< 0.1003	u	< 0.1042	u	< 0.1028	u	< 0.1041	u	< 1.0633	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	< 0.1185	u	< 0.11	u	< 0.1126	u	< 0.1106	u	< 0.1192	u	< 0.1177	u	< 0.1082	u	< 0.1123	u	< 0.1108	u	< 0.1122	u	< 1.1464	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	< 0.1278	u	< 0.1187	u	< 0.1214	u	< 0.1193	u	< 0.1286	u	< 0.127	u	< 0.1167	u	< 0.1212	u	< 0.1195	u	< 0.1211	u	< 1.2369	u
Dibenzofuran	-	-	-	-	-	-	< 0.1262	u	< 0.1172	u	< 0.1199	u	< 0.1178	u	< 0.127	u	< 0.1254	u	< 0.1152	u	< 0.1197	u	< 0.118	u	< 0.1195	u	< 1.221	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	< 0.1339	u	< 0.1243	u	< 0.1272	u	< 0.125	u	< 0.1348	u	< 0.133	u	< 0.1222	u	< 0.127	u	< 0.1252	u	< 0.1268	u	< 1.2957	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	< 0.1086	u	< 0.1008	u	< 0.1032	u	< 0.1013	u	< 0.1093	u	< 0.1079	u	< 0.0991	u	< 0.103	u	< 0.1015	u	< 0.1028	u	< 1.0507	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	< 0.1334	u	< 0.1239	u	< 0.1268	u	< 0.1245	u	< 0.1343	u	< 0.1326	u	< 0.1218	u	< 0.1265	u	< 0.1248	u	< 0.1264	u	< 1.2912	u
Di-n-octyl phthalate	-	-	-	-	-	-	< 0.1313	u	< 0.122	u	< 0.1248	u	< 0.1226	u	< 0.1322	u	< 0.1305	u	< 0.1199	u	< 0.1246	u	< 0.1228	u	< 0.1244	u	< 1.271	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	< 0.1432	u	< 0.1329	u	< 0.136	u	< 0.1336	u	< 0.1441	u	< 0.1423	u	< 0.1307	u	< 0.1358	u	< 0.1339	u	< 0.1356	u	< 1.3854	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	1.1	v	< 0.1491	u	0.2	J	< 0.1499	u	< 0.1617	u	< 0.1596	u	< 0.1466	u	< 0.1523	u	< 0.1502	u	< 0.1521	u	7.1	v
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	< 0.1113	u	< 0.1034	u	< 0.1058	u	< 0.1039	u	< 0.1121	u	< 0.1106	u	< 0.1017	u	< 0.1056	u	< 0.1041	u	< 0.1055	u	< 1.0776	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.1167	u	< 0.1084	u	< 0.1109	u	< 0.1089	u	< 0.1175	u	< 0.116	u	< 0.1066	u	< 0.1107	u	< 0.1091	u	< 0.1105	u	< 1.1295	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	< 0.0818	u	< 0.076	u	< 0.0778	u	< 0.0764	u	< 0.0824	u	< 0.0813	u	< 0.0747	u	< 0.0776	u	< 0.0765	u	< 0.0775	u	< 0.7919	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	< 0.105	u	< 0.0975	u	< 0.0998	u	< 0.098	u	< 0.1057	u	< 0.1044	u	< 0.0959	u	< 0.0996	u	< 0.0982	u	< 0.0995	u	< 1.0163	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	< 0.1341	u	< 0.1245	u	< 0.1274	u	< 0.1251	u	< 0.1349	u	< 0.1332	u	< 0.1224	u	< 0.1271	u	< 0.1254	u	< 0.127	u	< 1.2975	u
Isophorone	5.61E+03	(1)	2.70E+04	(4)	4.22E+00	(8)	< 0.1258	u	< 0.1168	u	< 0.1195	u	< 0.1174	u	< 0.1266	u	< 0.125	u	< 0.1148	u	< 0.1193	u	< 0.1176	u	< 0.1191	u	< 1.2173	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	3.9	v	< 0.1042	u	< 0.1067	u	< 0.1048	u	< 0.113	u	< 0.1115	u	< 0.1025	u	< 0.1065	u	< 0.105	u	< 0.1063	u	24	v
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	< 0.1215	u	< 0.1128	u	< 0.1154	u	< 0.1134	u	< 0.1223	u	< 0.1207	u	< 0.1109	u	< 0.1152	u	< 0.1136	u	< 0.115	u	< 1.1755	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	< 0.1223	u	< 0.1136	u	< 0.1162	u	< 0.1141	u	< 0.1231	u	< 0.1215	u	< 0.1117	u	< 0.116	u	< 0.1144	u	< 0.1158	u	< 1.1834	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	< 0.1056	u	< 0.0981	u	< 0.1004	u	< 0.0986	u	< 0.1063	u	< 0.105	u	< 0.0964	u	< 0.1002	u	< 0.0988	u	< 0.1	u	< 1.0222	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	< 0.0737	u	< 0.0684	u	< 0.07	u	< 0.0687	u	< 0.0741	u	< 0.0732	u	< 0.0673	u	< 0.0699	u	< 0.0689	u	< 0.0698	u	< 0.7128	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	2.3	v	< 0.1146	u	< 0.1173	u	< 0.1152	u	< 0.1242	u	< 0.1226	u	< 0.1127	u	< 0.117	u	< 0.1154	u	< 0.1169	u	15	v
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	0.91	v	< 0.0982	u	< 0.1005	u	< 0.0987	u	< 0.1064	u	< 0.1051	u	< 0.0965	u	< 0.1003	u	< 0.0989	u	< 0.1001	u	52	v
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	< 0.1523	u	< 0.1414	u	< 0.1447	u	< 0.1421	u	< 0.1533	u	< 0.1513	u	< 0.139	u	< 0.1444	u	< 0.1424	u	< 0.1442	u	< 1.4735	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	< 0.0991	u	< 0.0921	u	< 0.0942	u	< 0.0925	u	< 0.0998	u	< 0.0985	u	< 0.0905	u	< 0.094	u	< 0.0927	u	< 0.0939	u	< 0.9594	u
Total Petroleum Hydrocarbons (mg/kg)																												
Gasoline Range Organics (GRO)	-		-		-		320	v	< 1	u	50	v	< 1	u	< 1	u	< 2.6	u	< 1	u	< 1	u	< 1	u	< 1	u	1300	v
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-		**2300**	v	< 5	u	**1200**	v	< 6.2	u	< 5	u	< 5	u	< 5	u	< 6	u	< 6	u	< 6	u	**7800**	v
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-		< 498	u	< 49	u	< 550	u	< 56	u	< 49	u	< 48	u	< 48	u	< 50	u	< 50	u	< 50	u	< 4776	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 461
(9) SoilGW Risk-based EPA DAF = 461
(10) SoilGW MCL-based EPA DAF = 461
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-1 (2-4')		SWMU 10-1 (4-6')		SWMU 10-1 (18-20')		SWMU 10-2 (0-2')		SWMU 10-2 (2-4')		SWMU 10-3 (2-4')		SWMU 10-3 (6-8')		SWMU 10-3 (18-20')		SWMU 10-4 (0-2')		SWMU 10-4 (2-4')	
							1504C87-001		1504C87-002		1504C87-003		1505223-003*		1505223-004*		1504C87-004		1504C87-005		1504C87-006		1505004-001		1505004-002	
							4/28/2015		4/28/2015		4/28/2015		5/4/2015		5/4/2015		4/28/2015		4/28/2015		4/28/2015		4/29/2015		4/29/2015	
Metals (mg/kg)																										
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	< 1.5756	u	1.9	J	1.5	J	< 1.5365	u	1.7	J	< 1.5281	u	< 3.1112	u	< 1.5824	u	< 1.5131	u	< 1.6799	u
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	0.97	J	1.7	J	1.7	J	1.8	J	1.7	J	2.3	J	2.6	J	2.1	J	1.4	J	1.9	J
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	200	v	130	v	170	v	390	v	810	v	280	v	2900	v	750	v	460	v	390	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	1.1	v	1.1	v	1.1	v	0.91	v	0.98	v	0.88	v	0.92	v	1.1	v	0.71	v	0.98	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	< 0.0333	u	< 0.0353	u	< 0.0324	u	< 0.0324	u	< 0.0318	u	< 0.0323	u	< 0.0657	u	< 0.0334	u	< 0.0319	u	< 0.0355	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	10	v	10	v	16	v	11	v	11	v	17	v	29	v	14	v	14	v	9.9	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	9.68E-02	(8)	< 2.4772	u	< 2.5306	u	< 2.3553	u	<1	u	<1	u	< 2.3677	u	< 2.4762	u	< 2.4156	u	< 2.2587	u	< 2.5279	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	5.2	v	5.4	v	7	v	4.6	v	5.1	v	5	v	6.4	v	8.8	v	3.8	v	4.8	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	< 0.3097	u	< 0.3163	u	< 0.2944	u	< 0.2974	u	< 0.2865	u	< 0.296	u	< 0.3095	u	< 0.3019	u	< 0.2823	u	< 0.316	u
Iron	5.50E+04	(2)	8.20E+05	(6)	7.00E+03	(9)	16000	v	17000	v	23000	v	15000	v	17000	v	15000	v	13000	v	22000	v	10000	v	14000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	3.2	v	3.2	v	2	v	3.1	v	2.3	v	3.6	v	5.6	v	1.9	v	3.8	v	3.5	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	5.60E+02	(9)	300	v	290	v	480	v	700	v	360	v	820	v	1000	v	1200	v	440	v	310	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	0.0066	J	0.0063	J	0.0036	J	0.014	J	0.0062	J	0.1	v	0.087	v	0.0049	J	0.034	J	0.0082	J
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	9.1	v	9.6	v	16	v	9.2	v	8.9	v	8.9	v	10	v	16	v	6.5	v	8.3	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E+01	(8)	< 1.8348	u	< 1.9497	u	< 1.7891	u	< 1.7892	u	< 1.7549	u	< 1.7794	u	< 3.6229	u	< 1.8427	u	< 1.762	u	< 1.9562	u
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	< 0.0357	u	< 0.0379	u	< 0.0348	u	< 0.0348	u	< 0.0341	u	< 0.0346	u	< 0.0704	u	< 0.0358	u	< 0.0342	u	< 0.038	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	20	v	18	v	17	v	21	v	22	v	22	v	23	v	16	v	17	v	20	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	17	v	16	v	22	v	18	v	17	v	25	v	35	v	27	v	29	v	16	v
Volatiles (mg/kg)																										
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	< 0.0028	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0027	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	< 0.0052	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.005	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	< 0.0042	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.004	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	< 0.0041	u	< 0.0017	u	< 0.002	u	< 0.002	u	< 0.0017	u	< 0.0015	u	< 0.0016	u	< 0.0022	u	< 0.0019	u	< 0.0039	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	< 0.0138	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0131	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	< 0.0024	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0023	u
1,1-Dichloropropene	-	-	-	-	-	-	< 0.0051	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0049	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	< 0.0074	u	< 0.0006	u	< 0.0007	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.007	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	< 0.0058	u	< 0.0006	u	< 0.0007	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.0055	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.00636	u	< 0.00064	u	< 0.00074	u	< 0.00074	u	< 0.00063	u	< 0.00055	u	< 0.00061	u	< 0.00081	u	< 0.00072	u	< 0.00603	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	0.0061	J	0.000619	J	0.00162	J	0.000938	J	0.000663	J	< 0.0004	u	0.000564	J	0.00184	J	0.00077	J	< 0.0016	u
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	< 0.0059	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0056	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	< 0.0027	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0026	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.00208	u	< 0.00038	u	< 0.00044	u	< 0.00044	u	< 0.00037	u	< 0.00033	u	< 0.00036	u	< 0.00048	u	< 0.00042	u	< 0.00197	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	< 0.0138	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0131	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	< 0.0019	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0005	u	< 0.0004	u	< 0.0018	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	< 0.0023	u	0.000318	J	0.000993	J	< 0.0003	u	< 0.0003	u	< 0.0003	u	0.000351	J	0.00123	J	0.000347	J	0.11	v
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.00406	u	< 0.00029	u	< 0.00033	u	< 0.00033	u	< 0.00028	u	< 0.00025	u	< 0.00027	u	< 0.00036	u	< 0.00032	u	< 0.00385	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	< 0.0048	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0045	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.00429	u	< 0.00026	u	< 0.00031	u	< 0.00031	u	< 0.00026	u	< 0.00023	u	< 0.00025	u	< 0.00034	u	< 0.0003	u	< 0.00407	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.02069	u	< 0.00067	u	< 0.00077	u	< 0.00078	u	< 0.00066	u	< 0.00058	u	< 0.00064	u	< 0.00085	u	< 0.00075	u	2.9	v
2,2-Dichloropropane	-	-	-	-	-	-	< 0.005	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0048	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	< 0.0222	u	0.00257	J	0.00156	J	0.0038	J	0.00283	J	0.00273	J	0.00136	J	0.00151	J	0.00407	J	< 0.021	u
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	< 0.0039	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0037	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	< 0.0085	u	< 0.0004	u	< 0.0004	u	0.000788	J	0.000672	J	0.000656	J	0.000588	J	0.000748	J	0.000886	J	< 0.008	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.02268	u	< 0.00067	u	< 0.00077	u	< 0.00077	u	< 0.00066	u	< 0.00058	u	< 0.00063	u	< 0.00084	u	< 0.00075	u	0.69	v
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	4.80E+00	(9)	< 0.0026	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0025	u
4-Isopropyltoluene	-	-	-	-	-	-	< 0.0025	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.0023	u
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	< 0.006	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0057	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	0.043	J	0.00926	v	0.00324	J	0.0222	v	0.0199	v	0.0201	v	0.00534	J	0.00158	J	0.0237	v	< 0.0244	u
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	< 0.0051	u	0.00211	v	0.0146	v	0.00171	J	0.00203	v	0.000872	J	0.00319	v	0.0141	v	0.00118	J	< 0.0049	u
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	< 0.0026	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0024	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	< 0.0028	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0027	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	< 0.0028	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0026	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	< 0.0067	u	< 0.001	u	< 0.0012	u	< 0.0012	u	< 0.001	u	< 0.0009	u	< 0.001	u	< 0.0013	u	< 0.0011	u	< 0.0063	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	< 0.0248	u	< 0.0008	u	< 0.0009	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0007	u	< 0.001	u	< 0.0009	u	< 0.0236	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	< 0.0034	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0032	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	< 0.0027	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0025	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	< 0.0267	u	< 0.0017	u	< 0.002	u	< 0.002	u	< 0.0017	u	< 0.0015	u	< 0.0016	u	< 0.0022	u	< 0.0019	u	< 0.0253	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	< 0.0036	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0034	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	< 0.004	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0038	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	< 0.0044	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0041	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0024	u	< 0.0017	u	< 0.002	u	< 0.002	u	< 0.0017	u	< 0.0015	u	< 0.0016	u	< 0.0022	u	< 0.0019	u	< 0.0023	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	< 0.0026	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0025	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-1 (2-4')		SWMU 10-1 (4-6')		SWMU 10-1 (18-20')		SWMU 10-2 (0-2')		SWMU 10-2 (2-4')		SWMU 10-3 (2-4')		SWMU 10-3 (6-8')		SWMU 10-3 (18-20')		SWMU 10-4 (0-2')		SWMU 10-4 (2-4')	
							1504C87-001		1504C87-002		1504C87-003		1505223-003*		1505223-004*		1504C87-004		1504C87-005		1504C87-006		1505004-001		1505004-002	
							4/28/2015		4/28/2015		4/28/2015		5/4/2015		5/4/2015		4/28/2015		4/28/2015		4/28/2015		4/29/2015		4/29/2015	
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	< 0.0036	u	< 0.001	u	< 0.0011	u	< 0.0011	u	< 0.001	u	< 0.0008	u	< 0.0009	u	< 0.0012	u	< 0.0011	u	< 0.0034	u
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	< 0.0087	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0082	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	< 0.0032	u	0.0318	v	0.00192	J	0.000618	J	0.000468	J	0.000313	J	0.0008	J	0.00231	v	0.000703	J	0.0041	J
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.00479	u	< 0.00034	u	< 0.0004	u	< 0.0004	u	< 0.00034	u	< 0.0003	u	< 0.00032	u	< 0.00043	u	< 0.00038	u	< 0.00454	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	< 0.0029	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0028	u
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	< 0.0049	u	0.00669	v	< 0.0008	u	< 0.0008	u	0.00283	v	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0046	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	< 0.0138	u	0.000619	J	0.000566	J	0.000748	J	< 0.0004	u	0.000387	J	0.000547	J	0.00077	J	0.000606	J	< 0.0131	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.00821	u	0.000877	J	< 0.00064	u	< 0.00065	u	< 0.00055	u	< 0.00048	u	< 0.00053	u	< 0.0007	u	< 0.00062	u	< 0.00778	u
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	< 0.003	u	< 0.0007	u	< 0.0008	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0028	u
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	< 0.0026	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0024	u
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	< 0.0049	u	0.000593	J	0.000715	J	0.000658	J	< 0.0004	u	< 0.0004	u	0.000555	J	0.000781	J	0.000645	J	< 0.0047	u
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	< 0.0063	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.006	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	< 0.004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0037	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	< 0.003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0028	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	< 0.0041	u	0.00253	v	0.00836	v	0.00191	J	0.00155	J	0.00116	J	0.00301	v	0.01	v	0.00263	v	< 0.0039	u
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	< 0.0022	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0021	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0062	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0059	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	< 0.0034	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0032	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	< 0.0104	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0099	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	< 0.0138	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0131	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	< 0.0096	u	0.197	v	0.00647	v	0.00206	v	0.00143	J	0.00108	J	0.00181	v	0.00707	v	0.00182	J	< 0.0091	u
Semi-volatiles (mg/kg)																										
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.1259	u	< 0.1289	u	< 0.1198	u	< 0.1209	u	< 0.1175	u	< 0.2426	u	< 0.1259	u	< 0.1232	u	< 0.1146	u	< 0.1201	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.1176	u	< 0.1204	u	< 0.1119	u	< 0.113	u	< 0.1098	u	< 0.2266	u	< 0.1176	u	< 0.1151	u	< 0.1071	u	< 0.1122	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.1092	u	< 0.1118	u	< 0.1039	u	< 0.1049	u	< 0.102	u	< 0.2105	u	< 0.1092	u	< 0.1069	u	< 0.0994	u	< 0.1042	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.1286	u	< 0.1317	u	< 0.1224	u	< 0.1236	u	< 0.1201	u	< 0.2478	u	< 0.1287	u	< 0.1258	u	< 0.1171	u	< 0.1227	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.114	u	< 0.1167	u	< 0.1085	u	< 0.1095	u	< 0.1064	u	< 0.2196	u	< 0.114	u	< 0.1115	u	< 0.1038	u	3.6	v
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	< 0.1433	u	< 0.1467	u	< 0.1364	u	< 0.1377	u	< 0.1338	u	< 0.2761	u	< 0.1433	u	< 0.1402	u	< 0.1304	u	< 0.1367	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	< 0.1422	u	< 0.1456	u	< 0.1353	u	< 0.1366	u	< 0.1328	u	< 0.2739	u	< 0.1422	u	< 0.1391	u	< 0.1294	u	< 0.1356	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	< 0.123	u	< 0.1259	u	< 0.117	u	< 0.1181	u	< 0.1148	u	< 0.237	u	< 0.123	u	< 0.1203	u	< 0.1119	u	< 0.1173	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	< 0.0967	u	< 0.099	u	< 0.092	u	< 0.0929	u	< 0.0903	u	< 0.1863	u	< 0.0967	u	< 0.0946	u	< 0.088	u	< 0.0922	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	< 0.0511	u	< 0.0523	u	< 0.0486	u	< 0.0491	u	< 0.0477	u	< 0.0985	u	< 0.0511	u	< 0.05	u	< 0.0465	u	< 0.0487	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	< 0.11	u	< 0.1126	u	< 0.1047	u	< 0.1057	u	< 0.1027	u	< 0.212	u	< 0.11	u	< 0.1076	u	< 0.1001	u	< 0.1049	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	< 0.1367	u	< 0.14	u	< 0.1301	u	< 0.1313	u	< 0.1276	u	< 0.2634	u	< 0.1367	u	< 0.1337	u	< 0.1244	u	< 0.1304	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	< 0.1317	u	< 0.1349	u	< 0.1254	u	< 0.1266	u	< 0.123	u	< 0.2539	u	< 0.1318	u	< 0.1289	u	< 0.1199	u	< 0.1256	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	< 0.1148	u	< 0.1175	u	< 0.1092	u	< 0.1102	u	< 0.1072	u	< 0.2211	u	< 0.1148	u	< 0.1123	u	< 0.1045	u	< 0.1094	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.1125	u	< 0.1152	u	< 0.1071	u	< 0.1081	u	< 0.1051	u	< 0.2168	u	< 0.1126	u	< 0.1101	u	< 0.1024	u	0.42	v
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	< 0.1233	u	< 0.1262	u	< 0.1173	u	< 0.1184	u	< 0.1151	u	< 0.2375	u	< 0.1233	u	< 0.1206	u	< 0.1122	u	< 0.1176	u
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	< 0.1399	u	< 0.1433	u	< 0.1332	u	< 0.1344	u	< 0.1307	u	< 0.2696	u	< 0.14	u	< 0.1369	u	< 0.1274	u	< 0.1334	u
2-Nitrophenol	-	-	-	-	-	-	< 0.1105	u	< 0.1132	u	< 0.1052	u	< 0.1062	u	< 0.1032	u	< 0.213	u	< 0.1106	u	< 0.1081	u	< 0.1006	u	< 0.1054	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	< 0.0947	u	< 0.097	u	< 0.0901	u	< 0.091	u	< 0.0884	u	< 0.1825	u	< 0.0947	u	< 0.0926	u	< 0.0862	u	< 0.0903	u
3+4-Methylphenol	-	-	-	-	-	-	< 0.1274	u	< 0.1305	u	< 0.1213	u	< 0.1224	u	< 0.119	u	< 0.2456	u	< 0.1275	u	< 0.1247	u	< 0.116	u	< 0.1215	u
3-Nitroaniline	-	-	-	-	-	-	< 0.1185	u	< 0.1213	u	< 0.1128	u	< 0.1138	u	< 0.1106	u	< 0.2283	u	< 0.1185	u	< 0.1159	u	< 0.1078	u	< 0.113	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	< 0.0669	u	< 0.0685	u	< 0.0636	u	< 0.0642	u	< 0.0624	u	< 0.1288	u	< 0.0669	u	< 0.0654	u	< 0.0609	u	< 0.0638	u
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 0.1305	u	< 0.1336	u	< 0.1242	u	< 0.1253	u	< 0.1218	u	< 0.2514	u	< 0.1305	u	< 0.1276	u	< 0.1188	u	< 0.1244	u
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 0.1224	u	< 0.1254	u	< 0.1165	u	< 0.1176	u	< 0.1143	u	< 0.2359	u	< 0.1225	u	< 0.1198	u	< 0.1115	u	< 0.1168	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	< 0.1137	u	< 0.1164	u	< 0.1082	u	< 0.1093	u	< 0.1062	u	< 0.2191	u	< 0.1138	u	< 0.1113	u	< 0.1035	u	< 0.1085	u
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 0.1831	u	< 0.1875	u	< 0.1743	u	< 0.1759	u	< 0.171	u	< 0.3528	u	< 0.1832	u	< 0.1791	u	< 0.1667	u	< 0.1746	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	< 0.1105	u	< 0.1131	u	< 0.1051	u	< 0.1061	u	< 0.1031	u	< 0.2128	u	< 0.1105	u	< 0.1081	u	< 0.1005	u	< 0.1053	u
4-Nitrophenol	-	-	-	-	-	-	< 0.1059	u	< 0.1085	u	< 0.1008	u	< 0.1018	u	< 0.0989	u	< 0.2042	u	< 0.106	u	< 0.1037	u	< 0.0964	u	< 0.101	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	< 0.1498	u	< 0.1534	u	< 0.1426	u	< 0.144	u	< 0.1399	u	< 0.2887	u	< 0.1499	u	< 0.1466	u	< 0.1364	u	< 0.1429	u
Acenaphthylene	-	-	-	-	-	-	< 0.1246	u	< 0.1276	u	< 0.1186	u	< 0.1197	u	< 0.1163	u	< 0.24	u	< 0.1246	u	< 0.1219	u	< 0.1134	u	< 0.1188	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	< 0.107	u	< 0.1096	u	< 0.1019	u	< 0.1028	u	< 0.0999	u	< 0.2062	u	< 0.1071	u	< 0.1047	u	< 0.0974	u	< 0.1021	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	< 0.1045	u	< 0.107	u	< 0.0994	u	< 0.1003	u	< 0.0975	u	< 0.2013	u	< 0.1045	u	< 0.1022	u	< 0.0951	u	< 0.0996	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	< 0.1379	u	< 0.1411	u	< 0.1312	u	< 0.1324	u	< 0.1287	u	< 0.2656	u	< 0.1379	u	< 0.1349	u	< 0.1255	u	< 0.1315	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	< 0.0966	u	< 0.099	u	< 0.092	u	< 0.0928	u	< 0.0902	u	< 0.1862	u	< 0.0967	u	< 0.0946	u	< 0.088	u	< 0.0922	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	< 0.138	u	< 0.1413	u	< 0.1313	u	< 0.1326	u	< 0.1289	u	< 0.2659	u	< 0.138	u	< 0.135	u	< 0.1256	u	< 0.1316	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	< 0.1168	u	< 0.1196	u	< 0.1111	u	< 0.1122	u	< 0.109	u	< 0.225	u	< 0.1168	u	< 0.1142	u	< 0.1063	u	< 0.1114	u
Benzo(g,h,i)perylene	-	-	-	-	-	-	< 0.1399	u	< 0.1433	u	< 0.1332	u	< 0.1344	u	< 0.1307	u	< 0.2696	u	< 0.14	u	< 0.1369	u	< 0.1274	u	< 0.1335	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	< 0.139	u	< 0.1423	u	< 0.1323	u	< 0.1335	u	< 0.1298	u	< 0.2678	u	< 0.139	u	< 0.136	u	< 0.1265	u	< 0.1325	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	< 0.0701	u	< 0.0717	u	< 0.0667	u	< 0.0673	u	< 0.0654	u	< 0.135	u	< 0.0701	u	< 0.0685	u	< 0.0638	u	< 0.0668	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	< 0.1092	u	< 0.1118	u	< 0.104	u	< 0.1049	u	< 0.102	u	< 0.2105	u	< 0.1093	u	< 0.1069	u	< 0.0994	u	< 0.1042	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	< 0.1174	u	< 0.1202	u	< 0.1117	u	< 0.1127	u	< 0.1096	u	< 0.2262	u	< 0.1174	u	< 0.1148	u	< 0.1068	u	< 0.1119	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	< 0.1215	u	< 0.1244	u	< 0.1156	u	< 0.1167	u	< 0.1135	u	< 0.2341	u	< 0.1215	u	< 0.1189	u	< 0.1106	u	< 0.1159	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-1 (2-4')		SWMU 10-1 (4-6')		SWMU 10-1 (18-20')		SWMU 10-2 (0-2')		SWMU 10-2 (2-4')		SWMU 10-3 (2-4')		SWMU 10-3 (6-8')		SWMU 10-3 (18-20')		SWMU 10-4 (0-2')		SWMU 10-4 (2-4')	
							1504C87-001		1504C87-002		1504C87-003		1505223-003*		1505223-004*		1504C87-004		1504C87-005		1504C87-006		1505004-001		1505004-002	
							4/28/2015		4/28/2015		4/28/2015		5/4/2015		5/4/2015		4/28/2015		4/28/2015		4/28/2015		4/29/2015		4/29/2015	
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	< 0.0939	u	< 0.0962	u	< 0.0894	u	< 0.0902	u	< 0.0877	u	< 0.181	u	< 0.094	u	< 0.0919	u	< 0.0855	u	< 0.0896	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	< 0.1382	u	< 0.1415	u	< 0.1315	u	< 0.1327	u	< 0.129	u	0.29	J	< 0.1382	u	< 0.1352	u	< 0.1258	u	< 0.1318	u
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	< 0.1501	u	< 0.1537	u	< 0.1429	u	< 0.1442	u	< 0.1402	u	< 0.2893	u	< 0.1502	u	< 0.1469	u	< 0.1367	u	< 0.1432	u
Carbazole	-	-	-	-	-	-	< 0.1145	u	< 0.1173	u	< 0.109	u	< 0.11	u	< 0.1069	u	< 0.2207	u	< 0.1146	u	< 0.112	u	< 0.1043	u	< 0.1092	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	< 0.1235	u	< 0.1264	u	< 0.1175	u	< 0.1186	u	< 0.1153	u	< 0.2379	u	< 0.1235	u	< 0.1208	u	< 0.1124	u	< 0.1178	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	< 0.1332	u	< 0.1364	u	< 0.1268	u	< 0.128	u	< 0.1244	u	< 0.2567	u	< 0.1333	u	< 0.1303	u	< 0.1213	u	< 0.1271	u
Dibenzofuran	-	-	-	-	-	-	< 0.1315	u	< 0.1347	u	< 0.1252	u	< 0.1263	u	< 0.1228	u	< 0.2534	u	< 0.1315	u	< 0.1287	u	< 0.1197	u	< 0.1254	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	< 0.1396	u	< 0.1429	u	< 0.1328	u	< 0.1341	u	< 0.1303	u	< 0.2689	u	< 0.1396	u	< 0.1365	u	< 0.127	u	< 0.1331	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	< 0.1132	u	< 0.1159	u	< 0.1077	u	< 0.1087	u	< 0.1057	u	< 0.2181	u	< 0.1132	u	< 0.1107	u	< 0.103	u	< 0.1079	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	< 0.1391	u	< 0.1424	u	< 0.1324	u	< 0.1336	u	< 0.1299	u	< 0.268	u	< 0.1391	u	< 0.1361	u	< 0.1266	u	< 0.1326	u
Di-n-octyl phthalate	-	-	-	-	-	-	< 0.1369	u	< 0.1402	u	< 0.1303	u	< 0.1315	u	< 0.1278	u	< 0.2638	u	< 0.1369	u	< 0.1339	u	< 0.1246	u	< 0.1306	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	< 0.1492	u	< 0.1528	u	< 0.142	u	< 0.1434	u	< 0.1393	u	< 0.2875	u	< 0.1493	u	< 0.146	u	< 0.1358	u	< 0.1423	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	< 0.1674	u	< 0.1714	u	< 0.1593	u	< 0.1608	u	< 0.1563	u	< 0.3226	u	< 0.1674	u	< 0.1638	u	< 0.1524	u	0.22	J
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	< 0.1161	u	< 0.1188	u	< 0.1105	u	< 0.1115	u	< 0.1084	u	< 0.2236	u	< 0.1161	u	< 0.1135	u	< 0.1056	u	< 0.1107	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.1217	u	< 0.1246	u	< 0.1158	u	< 0.1169	u	< 0.1136	u	< 0.2344	u	< 0.1217	u	< 0.119	u	< 0.1107	u	< 0.116	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	< 0.0853	u	< 0.0873	u	< 0.0812	u	< 0.0819	u	< 0.0796	u	< 0.1644	u	< 0.0853	u	< 0.0834	u	< 0.0776	u	< 0.0813	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	< 0.1095	u	< 0.1121	u	< 0.1042	u	< 0.1052	u	< 0.1022	u	< 0.2109	u	< 0.1095	u	< 0.1071	u	< 0.0996	u	< 0.1044	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	< 0.1397	u	< 0.1431	u	< 0.133	u	< 0.1342	u	< 0.1305	u	< 0.2693	u	< 0.1398	u	< 0.1367	u	< 0.1272	u	< 0.1333	u
Isophorone	5.61E+03	(1)	2.70E+04	(4)	4.22E+00	(8)	< 0.1311	u	< 0.1342	u	< 0.1248	u	< 0.126	u	< 0.1224	u	< 0.2526	u	< 0.1311	u	< 0.1283	u	< 0.1193	u	< 0.125	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.117	u	< 0.1198	u	< 0.1114	u	< 0.1124	u	< 0.1093	u	< 0.2255	u	< 0.117	u	< 0.1145	u	< 0.1065	u	< 0.1116	u
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	< 0.1266	u	< 0.1296	u	< 0.1205	u	< 0.1216	u	< 0.1182	u	< 0.244	u	< 0.1266	u	< 0.1239	u	< 0.1152	u	< 0.1207	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	< 0.1275	u	< 0.1305	u	< 0.1213	u	< 0.1224	u	< 0.119	u	< 0.2456	u	< 0.1275	u	< 0.1247	u	< 0.116	u	< 0.1216	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	< 0.1101	u	< 0.1127	u	< 0.1048	u	< 0.1058	u	< 0.1028	u	< 0.2121	u	< 0.1101	u	< 0.1077	u	< 0.1002	u	< 0.105	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	< 0.0768	u	< 0.0786	u	< 0.0731	u	< 0.0738	u	< 0.0717	u	< 0.1479	u	< 0.0768	u	< 0.0751	u	< 0.0699	u	< 0.0732	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	< 0.1286	u	< 0.1317	u	< 0.1224	u	< 0.1236	u	< 0.1201	u	< 0.2479	u	< 0.1287	u	< 0.1259	u	< 0.1171	u	0.8	v
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	< 0.1102	u	< 0.1128	u	< 0.1049	u	< 0.1059	u	< 0.1029	u	< 0.2124	u	< 0.1102	u	< 0.1078	u	< 0.1003	u	< 0.1051	u
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	< 0.1587	u	< 0.1625	u	< 0.151	u	< 0.1525	u	< 0.1482	u	< 0.3058	u	< 0.1587	u	< 0.1553	u	< 0.1445	u	< 0.1514	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	< 0.1033	u	< 0.1058	u	< 0.0983	u	< 0.0993	u	< 0.0965	u	< 0.1991	u	< 0.1034	u	< 0.1011	u	< 0.0941	u	< 0.0985	u
Total Petroleum Hydrocarbons (mg/kg)																										
Gasoline Range Organics (GRO)	-		-		-		< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	< 1	u	25	v
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-		93	v	< 5	u	< 6	u	24	v	< 6	u	84	v	42	v	< 5	u	160	v	**4100**	v
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-		53	v	< 49	u	< 50	u	58	v	< 50	u	90	v	69	v	< 49	u	330	v	690	v

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 20
(9) SoilGW Risk-based EPA DAF = 20
(10) SoilGW MCL-based EPA DAF = 20
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-4 (6-8')		SWMU 10-4 (18-20')		SWMU 10-5 (0-2')		SWMU 10-5 (2-4')		SWMU 10-5 (4-6')		SWMU 10-5 (14-16')		SWMU 10-5 (22-24')		SWMU 10-6 (2-4')		SWMU 10-6 (10-12')	
							1505004-003		1505004-004		1505003-001**		1505003-002		1505003-003		1505003-004		1505003-005		1505223-001		1505223-002	
							4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		5/4/2015		5/4/2015	
Metals (mg/kg)																								
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	< 1.5535	u	< 1.5096	u	< 1.5344	u	< 1.8521	u	< 2.5689	u	< 2.4884	u	< 1.4919	u	< 1.4559	u	1.9	J
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	1.2	J	1.9	J	2.6	J	1.9	J	1.5	J	1.5	J	1.6	J	1.8	J	2.1	J
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	140	v	230	v	500	v	190	v	110	v	120	v	200	v	1000	v	550	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	0.84	v	1	v	0.99	v	1.4	v	1.8	v	1.8	v	0.99	v	1.1	v	1	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	< 0.0328	u	< 0.0319	u	< 0.0324	u	< 0.0391	u	0.062	J	< 0.0525	u	< 0.0315	u	< 0.0307	u	< 0.033	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	7.2	v	15	v	54	v	5	v	< 0.1174	u	2.5	v	15	v	9.3	v	14	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	9.68E-02	(8)	< 2.3823	u	< 2.2991	u	<1.0	u	< 2.9184	u	< 4.0338	u	< 3.8844	u	< 2.281	u	< 2.2114	u	< 2.3684	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	4	v	7.4	v	6.7	v	2.9	v	1	v	2.3	v	7.4	v	4.8	v	8	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	< 0.2978	u	< 0.2874	u	< 0.2973	u	< 0.3648	u	< 0.5042	u	< 0.4855	u	< 0.2851	u	< 0.2764	u	< 0.2961	u
Iron	5.50E+04	(2)	8.20E+05	(6)	7.00E+03	(9)	12000	v	21000	v	18000	v	12000	v	7200	v	10000	v	18000	v	15000	v	20000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	2.2	v	1.7	v	4.9	v	9.2	v	17	v	16	v	< 0.1235	u	2.5	v	1.6	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	5.60E+02	(9)	270	v	770	v	870	v	410	v	200	v	280	v	820	v	410	v	760	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	0.017	J	0.004	J	0.53	v	0.0087	J	0.0085	J	0.011	J	0.0039	J	0.0055	J	< 0.0035	u
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	6.8	v	16	v	14	v	4.4	v	0.69	J	3.1	v	15	v	8.2	v	16	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E+01	(8)	< 1.809	u	< 1.7578	u	< 1.7868	u	< 2.1567	u	< 2.9914	u	< 2.8977	u	< 1.7373	u	< 1.6954	u	< 1.8212	u
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	< 0.0352	u	< 0.0342	u	< 0.0347	u	< 0.0419	u	< 0.0581	u	< 0.0563	u	< 0.0338	u	< 0.0329	u	< 0.0354	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	15	v	22	v	26	v	11	v	2.3	J	7.2	v	18	v	21	v	14	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	13	v	22	v	150	v	22	v	24	v	27	v	23	v	14	v	23	v
Volatiles (mg/kg)																								
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	< 0.0002	u	< 0.0003	u	< 0.0025	u	< 0.0033	u	< 0.0651	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	< 0.0002	u	< 0.0003	u	< 0.0047	u	< 0.0061	u	< 0.1206	u	< 0.0107	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	< 0.0003	u	< 0.0004	u	< 0.0038	u	< 0.0049	u	< 0.0962	u	< 0.0086	u	< 0.0004	u	< 0.0005	u	< 0.0005	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	< 0.0015	u	< 0.0019	u	< 0.0037	u	< 0.0048	u	< 0.0954	u	< 0.0085	u	< 0.0019	u	< 0.0021	u	< 0.0025	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	< 0.0004	u	< 0.0004	u	< 0.0124	u	< 0.0161	u	< 0.3176	u	< 0.0282	u	< 0.0004	u	< 0.0005	u	< 0.0006	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	< 0.0003	u	< 0.0003	u	< 0.0021	u	< 0.0028	u	< 0.0547	u	< 0.0049	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
1,1-Dichloropropene	-	-	-	-	-	-	< 0.0003	u	< 0.0003	u	< 0.0046	u	< 0.006	u	< 0.1182	u	< 0.0105	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	< 0.0006	u	< 0.0007	u	< 0.0066	u	< 0.0086	u	< 0.1695	u	< 0.0151	u	< 0.0007	u	< 0.0008	u	< 0.0009	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	< 0.0005	u	< 0.0007	u	< 0.0052	u	< 0.0067	u	< 0.1332	u	< 0.0118	u	< 0.0007	u	< 0.0007	u	< 0.0009	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.00057	u	< 0.00069	u	< 0.00573	u	< 0.00741	u	< 0.14652	u	< 0.01302	u	< 0.00071	u	< 0.00077	u	< 0.00093	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	0.000406	J	0.00277	v	0.063	v	0.11	v	25	v	0.17	v	0.00263	v	0.00106	J	0.00363	v
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	< 0.0005	u	< 0.0005	u	< 0.0053	u	< 0.0069	u	< 0.1364	u	< 0.0121	u	< 0.0006	u	< 0.0006	u	< 0.0007	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	< 0.0002	u	< 0.0002	u	< 0.0025	u	< 0.0032	u	< 0.0632	u	< 0.0056	u	< 0.0002	u	< 0.0002	u	< 0.0003	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.00034	u	< 0.00041	u	< 0.00187	u	< 0.00242	u	< 0.04789	u	< 0.00425	u	< 0.00042	u	< 0.00046	u	< 0.00055	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	< 0.0004	u	< 0.0005	u	< 0.0124	u	< 0.0161	u	< 0.3176	u	< 0.0282	u	< 0.0005	u	< 0.0006	u	< 0.0007	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	< 0.0003	u	< 0.0004	u	< 0.0017	u	< 0.0022	u	< 0.0444	u	< 0.0039	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	< 0.0003	u	0.00184	J	0.041	v	0.054	v	8.4	v	0.056	J	0.00179	J	0.000477	J	0.0022	J
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.00025	u	< 0.00031	u	< 0.00365	u	< 0.00473	u	< 0.09349	u	< 0.0083	u	< 0.00032	u	< 0.00035	u	< 0.00042	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	< 0.0002	u	< 0.0003	u	< 0.0043	u	< 0.0055	u	< 0.1094	u	< 0.0097	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.00024	u	< 0.00029	u	< 0.00386	u	< 0.005	u	< 0.0989	u	< 0.00879	u	< 0.0003	u	< 0.00032	u	< 0.00039	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.0006	u	< 0.00072	u	0.51	v	0.63	v	46	v	0.38	v	0.000843	J	< 0.00081	u	< 0.00098	u
2,2-Dichloropropane	-	-	-	-	-	-	< 0.0003	u	< 0.0003	u	< 0.0045	u	< 0.0059	u	< 0.1156	u	< 0.0103	u	< 0.0003	u	< 0.0004	u	< 0.0004	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	0.00153	J	< 0.0006	u	< 0.02	u	< 0.0258	u	< 0.5105	u	< 0.0454	u	< 0.0006	u	0.00176	J	< 0.0008	u
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	< 0.0003	u	< 0.0004	u	< 0.0035	u	< 0.0045	u	< 0.0897	u	< 0.008	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	0.000559	J	< 0.0004	u	< 0.0076	u	< 0.0099	u	< 0.1953	u	< 0.0174	u	< 0.0004	u	0.000726	J	< 0.0005	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.00059	u	< 0.00072	u	0.53	v	0.74	v	80	v	0.69	v	0.000852	J	< 0.00081	u	< 0.00097	u
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	4.80E+00	(9)	< 0.0003	u	< 0.0004	u	< 0.0023	u	< 0.003	u	< 0.06	u	< 0.0053	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
4-Isopropyltoluene	-	-	-	-	-	-	< 0.0006	u	< 0.0007	u	0.0061	J	0.0092	J	1.2	v	0.02	J	< 0.0007	u	< 0.0008	u	< 0.001	u
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	< 0.0006	u	< 0.0008	u	< 0.0054	u	< 0.007	u	< 0.1378	u	< 0.0122	u	< 0.0008	u	< 0.0009	u	< 0.0011	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	0.00619	J	0.0018	J	< 0.0232	u	< 0.03	u	< 0.5921	u	< 0.0526	u	0.00186	J	0.00854	J	0.00589	J
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	0.0019	v	0.0204	v	0.014	J	0.04	J	8	v	0.049	J	0.0179	v	0.00387	v	0.0226	v
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	< 0.0004	u	< 0.0005	u	< 0.0023	u	< 0.003	u	< 0.0589	u	< 0.0052	u	< 0.0005	u	< 0.0006	u	< 0.0007	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	< 0.0002	u	< 0.0003	u	< 0.0025	u	< 0.0033	u	< 0.0649	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	< 0.0004	u	< 0.0005	u	< 0.0025	u	< 0.0032	u	< 0.0638	u	< 0.0057	u	< 0.0005	u	< 0.0005	u	< 0.0006	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	< 0.0009	u	< 0.0011	u	< 0.006	u	< 0.0078	u	< 0.1533	u	< 0.0136	u	< 0.0011	u	< 0.0012	u	< 0.0015	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	< 0.0007	u	< 0.0008	u	< 0.0224	u	< 0.0289	u	< 0.5714	u	< 0.0508	u	< 0.0009	u	< 0.0009	u	< 0.0011	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	< 0.0003	u	< 0.0003	u	< 0.003	u	< 0.0039	u	< 0.0773	u	< 0.0069	u	< 0.0003	u	< 0.0004	u	< 0.0005	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	< 0.0002	u	< 0.0002	u	< 0.0024	u	< 0.0031	u	< 0.0611	u	< 0.0054	u	< 0.0002	u	< 0.0002	u	< 0.0003	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	< 0.0015	u	< 0.0019	u	< 0.024	u	< 0.0311	u	< 0.6146	u	< 0.0546	u	< 0.0019	u	< 0.0021	u	< 0.0025	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	< 0.0003	u	< 0.0004	u	< 0.0032	u	< 0.0042	u	< 0.0828	u	< 0.0074	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	< 0.0002	u	< 0.0002	u	< 0.0036	u	< 0.0047	u	< 0.0919	u	< 0.0082	u	< 0.0002	u	< 0.0002	u	< 0.0003	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	< 0.0004	u	< 0.0005	u	< 0.0039	u	< 0.0051	u	< 0.1005	u	< 0.0089	u	< 0.0005	u	< 0.0005	u	< 0.0007	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0015	u	< 0.0019	u	< 0.0022	u	< 0.0028	u	< 0.0551	u	< 0.0049	u	< 0.0019	u	< 0.0021	u	< 0.0025	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	< 0.0002	u	< 0.0002	u	< 0.0023	u	< 0.003	u	< 0.0595	u	< 0.0053	u	< 0.0002	u	< 0.0002	u	< 0.0003	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-4 (6-8')		SWMU 10-4 (18-20')		SWMU 10-5 (0-2')		SWMU 10-5 (2-4')		SWMU 10-5 (4-6')		SWMU 10-5 (14-16')		SWMU 10-5 (22-24')		SWMU 10-6 (2-4')		SWMU 10-6 (10-12')	
							1505004-003		1505004-004		1505003-001**		1505003-002		1505003-003		1505003-004		1505003-005		1505223-001		1505223-002	
							4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		5/4/2015		5/4/2015	
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	< 0.0009	u	< 0.0011	u	< 0.0033	u	< 0.0042	u	< 0.0836	u	< 0.0074	u	< 0.0011	u	< 0.0012	u	< 0.0014	u
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	< 0.0006	u	< 0.0008	u	< 0.0078	u	< 0.0101	u	< 0.1997	u	< 0.0177	u	< 0.0008	u	< 0.0008	u	< 0.001	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	0.000421	J	0.00291	v	0.016	J	0.03	J	14	v	0.026	J	0.00258	v	0.000767	J	0.0035	v
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.0003	u	< 0.00037	u	< 0.00431	u	< 0.00558	u	< 0.11026	u	< 0.00979	u	< 0.00038	u	< 0.00041	u	< 0.0005	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	< 0.0004	u	0.000482	J	< 0.0026	u	0.0046	J	2.6	v	0.013	J	< 0.0004	u	< 0.0005	u	< 0.0006	u
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	0.00139	J	< 0.0008	u	< 0.0044	u	< 0.0057	u	< 0.1123	u	< 0.01	u	< 0.0008	u	< 0.0009	u	< 0.001	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	0.000529	J	0.000612	J	< 0.0124	u	< 0.0161	u	< 0.3176	u	< 0.0282	u	0.000565	J	0.000695	J	< 0.0006	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.0005	u	0.000742	J	0.12	v	0.16	v	26	v	0.11	J	0.000785	J	< 0.00067	u	0.00103	J
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	< 0.0006	u	< 0.0008	u	0.0094	J	0.016	J	1.9	J	0.038	J	< 0.0008	u	< 0.0009	u	< 0.001	u
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	< 0.0003	u	0.00051	J	0.0051	J	0.01	J	3.8	v	0.026	J	0.000469	J	< 0.0004	u	0.000638	J
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	0.000667	J	0.000714	J	< 0.0044	u	< 0.0057	u	1.2	v	< 0.0101	u	0.000766	J	0.000695	J	0.000925	J
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	< 0.0003	u	< 0.0003	u	< 0.0057	u	< 0.0074	u	< 0.1457	u	< 0.013	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	< 0.0002	u	< 0.0003	u	< 0.0036	u	< 0.0046	u	< 0.091	u	< 0.0081	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	< 0.0003	u	< 0.0004	u	< 0.0027	u	< 0.0035	u	< 0.0688	u	< 0.0061	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	0.00162	v	0.0127	v	0.01	J	0.024	J	7.1	v	0.013	J	0.0112	v	0.00275	v	0.0146	v
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	< 0.0002	u	< 0.0003	u	< 0.002	u	< 0.0026	u	< 0.0516	u	< 0.0046	u	< 0.0003	u	< 0.0003	u	< 0.0004	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0002	u	< 0.0002	u	< 0.0056	u	< 0.0072	u	< 0.143	u	< 0.0127	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	< 0.0003	u	< 0.0004	u	< 0.003	u	< 0.0039	u	< 0.0773	u	< 0.0069	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	< 0.0003	u	< 0.0004	u	< 0.0094	u	< 0.0121	u	< 0.2397	u	< 0.0213	u	< 0.0004	u	< 0.0004	u	< 0.0005	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	< 0.0002	u	< 0.0002	u	< 0.0124	u	< 0.0161	u	< 0.3176	u	< 0.0282	u	< 0.0002	u	< 0.0002	u	< 0.0003	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	0.00118	J	0.00975	v	0.14	v	0.15	v	54	v	0.11	J	0.00849	v	0.0022	v	0.0116	v
Semi-volatiles (mg/kg)																								
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.1177	u	< 0.1164	u	< 1.2319	u	< 0.7588	u	< 0.2044	u	< 0.2032	u	< 0.1151	u	< 0.1126	u	< 0.1209	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.11	u	< 0.1088	u	< 1.1511	u	< 0.7091	u	< 0.191	u	< 0.1898	u	< 0.1076	u	< 0.1052	u	< 0.1129	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.1021	u	< 0.101	u	< 1.0688	u	< 0.6584	u	< 0.1774	u	< 0.1763	u	< 0.0999	u	< 0.0977	u	< 0.1049	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.1203	u	< 0.119	u	< 1.2587	u	< 0.7754	u	< 0.2089	u	< 0.2076	u	< 0.1176	u	< 0.1151	u	< 0.1235	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.1066	u	< 0.1054	u	< 1.1155	u	< 0.6871	u	16	v	< 0.184	u	< 0.1042	u	< 0.102	u	< 0.1094	u
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	< 0.134	u	< 0.1326	u	< 1.4024	u	< 0.8639	u	< 0.2327	u	< 0.2313	u	< 0.131	u	< 0.1282	u	< 0.1376	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	< 0.1329	u	< 0.1315	u	< 1.3913	u	< 0.857	u	< 0.2309	u	< 0.2295	u	< 0.13	u	< 0.1272	u	< 0.1365	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	< 0.115	u	< 0.1137	u	< 1.2034	u	< 0.7413	u	< 0.1997	u	< 0.1985	u	< 0.1124	u	< 0.11	u	< 0.1181	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	< 0.0904	u	< 0.0894	u	< 0.9459	u	< 0.5827	u	< 0.157	u	< 0.156	u	< 0.0884	u	< 0.0865	u	< 0.0928	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	< 0.0478	u	< 0.0473	u	< 0.5	u	< 0.308	u	< 0.083	u	< 0.0825	u	< 0.0467	u	< 0.0457	u	< 0.0491	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	< 0.1029	u	< 0.1018	u	< 1.0766	u	< 0.6632	u	< 0.1787	u	< 0.1776	u	< 0.1006	u	< 0.0984	u	< 0.1056	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	< 0.1278	u	< 0.1264	u	< 1.3376	u	< 0.824	u	< 0.222	u	< 0.2206	u	< 0.125	u	< 0.1223	u	< 0.1312	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	< 0.1232	u	< 0.1219	u	< 1.2893	u	< 0.7942	u	< 0.214	u	< 0.2126	u	< 0.1205	u	< 0.1179	u	< 0.1265	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	< 0.1073	u	< 0.1062	u	< 1.123	u	< 0.6918	u	< 0.1864	u	< 0.1852	u	< 0.1049	u	< 0.1027	u	< 0.1102	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.1052	u	< 0.1041	u	< 1.1013	u	< 0.6784	u	26	v	< 0.1816	u	< 0.1029	u	< 0.1007	u	< 0.1081	u
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	< 0.1153	u	< 0.114	u	< 1.2064	u	< 0.7432	u	< 0.2002	u	< 0.199	u	< 0.1127	u	< 0.1103	u	< 0.1184	u
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	< 0.1308	u	< 0.1294	u	< 1.3693	u	< 0.8435	u	< 0.2272	u	< 0.2258	u	< 0.128	u	< 0.1252	u	< 0.1344	u
2-Nitrophenol	-	-	-	-	-	-	< 0.1033	u	< 0.1022	u	< 1.0816	u	< 0.6663	u	< 0.1795	u	< 0.1784	u	< 0.1011	u	< 0.0989	u	< 0.1061	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	< 0.0885	u	< 0.0876	u	< 0.9267	u	< 0.5708	u	< 0.1538	u	< 0.1528	u	< 0.0866	u	< 0.0847	u	< 0.0909	u
3+4-Methylphenol	-	-	-	-	-	-	< 0.1192	u	< 0.1179	u	< 1.2472	u	< 0.7683	u	< 0.207	u	< 0.2057	u	< 0.1165	u	< 0.114	u	< 0.1224	u
3-Nitroaniline	-	-	-	-	-	-	< 0.1108	u	< 0.1096	u	< 1.1595	u	< 0.7142	u	< 0.1924	u	< 0.1912	u	< 0.1083	u	< 0.106	u	< 0.1138	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	< 0.0625	u	< 0.0618	u	< 0.6543	u	< 0.4031	u	< 0.1086	u	< 0.1079	u	< 0.0611	u	< 0.0598	u	< 0.0642	u
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 0.122	u	< 0.1207	u	< 1.2768	u	< 0.7865	u	< 0.2119	u	< 0.2106	u	< 0.1193	u	< 0.1167	u	< 0.1253	u
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 0.1145	u	< 0.1133	u	< 1.1982	u	< 0.7381	u	< 0.1988	u	< 0.1976	u	< 0.112	u	< 0.1096	u	< 0.1176	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	< 0.1063	u	< 0.1052	u	< 1.1129	u	< 0.6856	u	< 0.1847	u	< 0.1836	u	< 0.104	u	< 0.1018	u	< 0.1092	u
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 0.1712	u	< 0.1694	u	< 1.792	u	< 1.1039	u	< 0.2974	u	< 0.2955	u	< 0.1674	u	< 0.1638	u	< 0.1758	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	< 0.1033	u	< 0.1022	u	< 1.0809	u	< 0.6658	u	< 0.1794	u	< 0.1783	u	< 0.101	u	< 0.0988	u	< 0.1061	u
4-Nitrophenol	-	-	-	-	-	-	< 0.0991	u	< 0.098	u	< 1.0368	u	< 0.6387	u	< 0.1721	u	< 0.171	u	< 0.0969	u	< 0.0948	u	< 0.1017	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	< 0.1401	u	< 0.1386	u	< 1.4664	u	< 0.9033	u	< 0.2434	u	< 0.2419	u	< 0.137	u	< 0.1341	u	< 0.1439	u
Acenaphthylene	-	-	-	-	-	-	< 0.1165	u	< 0.1152	u	< 1.2191	u	< 0.751	u	< 0.2023	u	< 0.2011	u	< 0.1139	u	< 0.1115	u	< 0.1196	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	< 0.1001	u	< 0.099	u	< 1.0475	u	< 0.6453	u	< 0.1738	u	< 0.1728	u	< 0.0979	u	< 0.0958	u	< 0.1028	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	< 0.0977	u	< 0.0966	u	< 1.0222	u	< 0.6297	u	< 0.1696	u	< 0.1686	u	< 0.0955	u	< 0.0935	u	< 0.1003	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	< 0.1289	u	< 0.1275	u	< 1.349	u	< 0.831	u	< 0.2239	u	< 0.2225	u	< 0.1261	u	< 0.1233	u	< 0.1324	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	< 0.0904	u	< 0.0894	u	< 0.9458	u	< 0.5826	u	< 0.157	u	< 0.156	u	< 0.0884	u	< 0.0865	u	< 0.0928	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	< 0.129	u	< 0.1277	u	< 1.3505	u	< 0.8319	u	< 0.2241	u	< 0.2227	u	< 0.1262	u	< 0.1235	u	< 0.1325	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	< 0.1092	u	< 0.108	u	< 1.1427	u	< 0.7039	u	< 0.1896	u	< 0.1885	u	< 0.1068	u	< 0.1045	u	< 0.1121	u
Benzo(g,h,i)perylene	-	-	-	-	-	-	< 0.1308	u	< 0.1294	u	< 1.3694	u	< 0.8436	u	< 0.2273	u	< 0.2259	u	< 0.128	u	< 0.1252	u	< 0.1344	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	< 0.1299	u	< 0.1285	u	< 1.36	u	< 0.8377	u	< 0.2257	u	< 0.2243	u	< 0.1271	u	< 0.1243	u	< 0.1334	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	< 0.0655	u	< 0.0648	u	< 0.6857	u	< 0.4224	u	< 0.1138	u	< 0.1131	u	< 0.0641	u	< 0.0627	u	< 0.0673	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	< 0.1021	u	< 0.101	u	< 1.0689	u	< 0.6585	u	< 0.1774	u	< 0.1763	u	< 0.0999	u	< 0.0977	u	< 0.1049	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	< 0.1097	u	< 0.1086	u	< 1.1486	u	< 0.7075	u	< 0.1906	u	< 0.1894	u	< 0.1073	u	< 0.105	u	< 0.1127	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	< 0.1136	u	< 0.1124	u	< 1.1891	u	< 0.7325	u	< 0.1973	u	< 0.1961	u	< 0.1111	u	< 0.1087	u	< 0.1167	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-4 (6-8')		SWMU 10-4 (18-20')		SWMU 10-5 (0-2')		SWMU 10-5 (2-4')		SWMU 10-5 (4-6')		SWMU 10-5 (14-16')		SWMU 10-5 (22-24')		SWMU 10-6 (2-4')		SWMU 10-6 (10-12')	
							1505004-003		1505004-004		1505003-001**		1505003-002		1505003-003		1505003-004		1505003-005		1505223-001		1505223-002	
							4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		4/29/2015		5/4/2015		5/4/2015	
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	< 0.0878	u	< 0.0869	u	< 0.9193	u	< 0.5663	u	< 0.1526	u	< 0.1516	u	< 0.0859	u	< 0.0841	u	< 0.0902	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	< 0.1292	u	< 0.1278	u	< 1.352	u	< 0.8328	u	< 0.2244	u	< 0.223	u	< 0.1263	u	< 0.1236	u	< 0.1327	u
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	< 0.1404	u	< 0.1389	u	< 1.4691	u	< 0.905	u	< 0.2438	u	< 0.2423	u	< 0.1373	u	< 0.1343	u	< 0.1441	u
Carbazole	-	-	-	-	-	-	< 0.1071	u	< 0.1059	u	< 1.1208	u	< 0.6904	u	< 0.186	u	< 0.1849	u	< 0.1047	u	< 0.1025	u	< 0.11	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	< 0.1155	u	< 0.1142	u	< 1.2084	u	< 0.7444	u	< 0.2005	u	< 0.1993	u	< 0.1129	u	< 0.1105	u	< 0.1186	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	< 0.1246	u	< 0.1232	u	< 1.3037	u	< 0.8031	u	< 0.2164	u	< 0.215	u	< 0.1218	u	< 0.1192	u	< 0.1279	u
Dibenzofuran	-	-	-	-	-	-	< 0.123	u	< 0.1216	u	< 1.287	u	< 0.7928	u	< 0.2136	u	< 0.2123	u	< 0.1203	u	< 0.1177	u	< 0.1263	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	< 0.1305	u	< 0.1291	u	< 1.3657	u	< 0.8413	u	< 0.2266	u	< 0.2252	u	< 0.1276	u	< 0.1249	u	< 0.134	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	< 0.1058	u	< 0.1047	u	< 1.1075	u	< 0.6822	u	< 0.1838	u	< 0.1827	u	< 0.1035	u	< 0.1013	u	< 0.1087	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	< 0.13	u	< 0.1286	u	< 1.361	u	< 0.8384	u	< 0.2259	u	< 0.2245	u	< 0.1272	u	< 0.1244	u	< 0.1335	u
Di-n-octyl phthalate	-	-	-	-	-	-	< 0.128	u	< 0.1266	u	< 1.3397	u	< 0.8252	u	< 0.2223	u	< 0.221	u	< 0.1252	u	< 0.1225	u	< 0.1314	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	< 0.1395	u	< 0.138	u	< 1.4603	u	< 0.8996	u	< 0.2423	u	< 0.2408	u	< 0.1365	u	< 0.1335	u	< 0.1433	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	< 0.1565	u	< 0.1549	u	< 1.6383	u	< 1.0092	u	1.4	v	< 0.2702	u	< 0.1531	u	< 0.1498	u	< 0.1607	u
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	< 0.1085	u	< 0.1074	u	< 1.1358	u	< 0.6997	u	< 0.1885	u	< 0.1873	u	< 0.1061	u	< 0.1038	u	< 0.1114	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.1138	u	< 0.1125	u	< 1.1906	u	< 0.7334	u	< 0.1976	u	< 0.1964	u	< 0.1112	u	< 0.1089	u	< 0.1168	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	< 0.0797	u	< 0.0789	u	< 0.8347	u	< 0.5142	u	< 0.1385	u	< 0.1377	u	< 0.078	u	< 0.0763	u	< 0.0819	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	< 0.1023	u	< 0.1012	u	< 1.0712	u	< 0.6599	u	< 0.1778	u	< 0.1767	u	< 0.1001	u	< 0.0979	u	< 0.1051	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	< 0.1307	u	< 0.1293	u	< 1.3676	u	< 0.8424	u	< 0.2269	u	< 0.2256	u	< 0.1278	u	< 0.125	u	< 0.1342	u
Isophorone	5.61E+03	(1)	2.70E+04	(4)	4.22E+00	(8)	< 0.1226	u	< 0.1213	u	< 1.283	u	< 0.7904	u	< 0.2129	u	< 0.2116	u	< 0.1199	u	< 0.1173	u	< 0.1259	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.1094	u	< 0.1082	u	< 1.145	u	< 0.7053	u	5.8	v	< 0.1889	u	< 0.107	u	< 0.1047	u	< 0.1123	u
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	< 0.1184	u	< 0.1171	u	< 1.239	u	< 0.7632	u	< 0.2056	u	< 0.2043	u	< 0.1158	u	< 0.1133	u	< 0.1216	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	< 0.1192	u	< 0.1179	u	< 1.2474	u	< 0.7684	u	< 0.207	u	< 0.2057	u	< 0.1166	u	< 0.114	u	< 0.1224	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	< 0.1029	u	< 0.1018	u	< 1.0774	u	< 0.6637	u	< 0.1788	u	< 0.1777	u	< 0.1007	u	< 0.0985	u	< 0.1057	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	< 0.0718	u	< 0.071	u	< 0.7513	u	< 0.4628	u	< 0.1247	u	< 0.1239	u	< 0.0702	u	< 0.0687	u	< 0.0737	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	< 0.1203	u	< 0.119	u	< 1.2589	u	1.1	J	3	v	< 0.2076	u	< 0.1176	u	< 0.1151	u	< 0.1235	u
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	< 0.103	u	< 0.1019	u	< 1.0785	u	< 0.6644	u	< 0.179	u	< 0.1779	u	< 0.1008	u	< 0.0986	u	< 0.1058	u
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	< 0.1484	u	< 0.1468	u	< 1.5531	u	< 0.9567	u	< 0.2577	u	< 0.2562	u	< 0.1451	u	< 0.142	u	< 0.1524	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	< 0.0966	u	< 0.0956	u	< 1.0112	u	< 0.6229	u	< 0.1678	u	< 0.1668	u	< 0.0945	u	< 0.0925	u	< 0.0992	u
Total Petroleum Hydrocarbons (mg/kg)																								
Gasoline Range Organics (GRO)	-		-		-		< 1	u	< 1	u	2.5	J	4.7	v	740	v	13	v	< 1	u	< 1	u	< 1	u
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-		< 5	u	< 5	u	**7700**	v	780	v	**3000**	v	< 5	u	< 6	u	< 6	u	< 5	u
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-		< 49	u	< 49	u	**5900**	v	300	v	< 484	u	< 50	u	< 50	u	< 50	u	< 48	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 20
(9) SoilGW Risk-based EPA DAF = 20
(10) SoilGW MCL-based EPA DAF = 20
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-7 (2-4')		SWMU 10-7 (4-6')		SWMU 10-7 (18-20')		SWMU 10-8 (2-4')		SWMU 10-8 (4-6')		SWMU 10-8 (18-20')		SWMU 10-9 (2-4')		SWMU 10-9 (4-6')		SWMU 10-9 (18-20')	
							1505059-001		1505059-002		1505059-003		1505057-005		1505057-006		1505057-007		1505057-001		1505057-002		1505057-003	
							5/1/2015		5/1/2015		5/1/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015	
Metals (mg/kg)																								
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	< 1.5741	u	< 7.9126	u	< 7.6176	u	< 1.4477	u	< 1.4892	u	< 1.5077	u	< 1.5359	u	< 1.5635	u	< 1.5233	u
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	2.1	J	2.2	J	< 1.6999	u	1.5	J	1.9	J	2	J	1.8	J	1.1	J	2.2	J
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	220	v	200	v	250	v	830	v	130	v	470	v	220	v	250	v	360	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	0.85	v	0.92	v	1.1	v	0.65	v	0.83	v	0.99	v	0.77	v	0.94	v	0.99	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	< 0.0332	u	< 0.0334	u	< 0.0322	u	< 0.0306	u	< 0.0314	u	< 0.0318	u	< 0.0324	u	< 0.033	u	< 0.0322	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	11	v	11	v	16	v	29	v	11	v	20	v	17	v	14	v	14	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	9.68E-02	(8)	< 2.3708	u	< 2.3862	u	< 2.3465	u	< 2.2842	u	< 2.3284	u	< 2.3189	u	< 2.3327	u	< 2.4023	u	< 2.3271	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	4.8	v	5.7	v	7.2	v	3.9	v	4.5	v	8.7	v	4.6	v	5.3	v	7.6	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	< 0.2963	u	< 0.2983	u	< 0.2933	u	< 0.2855	u	< 0.291	u	< 0.2899	u	< 0.2916	u	< 0.3003	u	< 0.2909	u
Iron	5.50E+04	(2)	8.20E+05	(6)	7.00E+03	(9)	15000	v	16000	v	24000	v	14000	v	13000	v	17000	v	12000	v	16000	v	20000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	2.7	v	2.5	v	2.2	v	4.5	v	3.4	v	0.27	J	4.8	v	3.2	v	2.3	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	5.60E+02	(9)	860	v	710	v	540	v	380	v	370	v	1200	v	180	v	290	v	860	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	0.033	J	0.0057	J	0.0035	J	0.015	J	0.041	v	0.0037	J	0.07	J	0.0086	J	0.0059	J
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	8.4	v	10	v	16	v	6.9	v	7.8	v	16	v	7.7	v	10	v	15	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E+01	(8)	< 1.8329	u	< 1.8428	u	< 1.7741	u	< 1.6858	u	< 1.7341	u	< 1.7557	u	< 1.7886	u	< 1.8206	u	< 1.7738	u
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	< 0.0356	u	< 0.0358	u	< 0.0345	u	< 0.0328	u	< 0.0337	u	< 0.0341	u	< 0.0348	u	< 0.0354	u	< 0.0345	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	23	v	24	v	23	v	22	v	17	v	15	v	18	v	19	v	49	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	20	v	19	v	24	v	17	v	18	v	24	v	24	v	32	v	21	v
Volatiles (mg/kg)																								
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0536	u	< 0.0026	u	< 0.0003	u	< 0.0003	u	< 0.0119	u	< 0.0004	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0993	u	< 0.0048	u	< 0.0003	u	< 0.0002	u	< 0.022	u	< 0.0003	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0792	u	< 0.0038	u	< 0.0004	u	< 0.0004	u	< 0.0175	u	< 0.0005	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	< 0.0019	u	< 0.0018	u	< 0.0022	u	< 0.0786	u	< 0.0038	u	< 0.0019	u	< 0.0018	u	< 0.0174	u	< 0.0024	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	0.000473	J	< 0.0004	u	< 0.0005	u	< 0.2615	u	< 0.0125	u	< 0.0004	u	< 0.0004	u	< 0.0578	u	< 0.0006	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.045	u	< 0.0022	u	< 0.0003	u	< 0.0003	u	< 0.01	u	< 0.0004	u
1,1-Dichloropropene	-	-	-	-	-	-	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0974	u	< 0.0047	u	< 0.0003	u	< 0.0003	u	< 0.0215	u	< 0.0004	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	< 0.0007	u	< 0.0007	u	< 0.0008	u	< 0.1395	u	< 0.0067	u	< 0.0007	u	< 0.0006	u	< 0.0309	u	< 0.0009	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	< 0.0007	u	< 0.0006	u	< 0.0008	u	< 0.1097	u	< 0.0053	u	< 0.0007	u	< 0.0006	u	< 0.0243	u	< 0.0008	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.00072	u	< 0.00066	u	< 0.00082	u	< 0.12063	u	< 0.00578	u	< 0.00071	u	< 0.00065	u	< 0.02668	u	< 0.00088	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	< 0.0005	u	0.00194	v	0.00201	J	9.7	v	0.021	J	0.00236	v	< 0.0005	u	0.42	v	0.00229	J
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.1123	u	< 0.0054	u	< 0.0006	u	< 0.0005	u	< 0.0248	u	< 0.0007	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0521	u	< 0.0025	u	< 0.0002	u	< 0.0002	u	< 0.0115	u	< 0.0003	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.00042	u	< 0.00039	u	< 0.00048	u	< 0.03943	u	< 0.00189	u	< 0.00042	u	< 0.00038	u	< 0.00872	u	< 0.00052	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.2615	u	< 0.0125	u	< 0.0005	u	< 0.0005	u	< 0.0578	u	< 0.0006	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0365	u	< 0.0018	u	< 0.0004	u	< 0.0004	u	< 0.0081	u	< 0.0005	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	< 0.0003	u	0.00119	J	0.00114	J	4.7	v	0.0048	J	0.00159	J	< 0.0003	u	0.12	J	0.00151	J
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.00032	u	< 0.0003	u	< 0.00037	u	< 0.07697	u	< 0.00369	u	< 0.00032	u	< 0.00029	u	< 0.01702	u	< 0.00039	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.09	u	< 0.0043	u	< 0.0003	u	< 0.0003	u	< 0.0199	u	< 0.0004	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.0003	u	< 0.00027	u	< 0.00034	u	< 0.08143	u	< 0.0039	u	< 0.00029	u	< 0.00027	u	< 0.01801	u	< 0.00037	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.00075	u	< 0.00069	u	< 0.00086	u	27	v	0.37	v	< 0.00074	u	< 0.00068	u	1.1	v	< 0.00092	u
2,2-Dichloropropane	-	-	-	-	-	-	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0952	u	< 0.0046	u	< 0.0003	u	< 0.0003	u	< 0.021	u	< 0.0004	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	0.00273	J	0.00175	J	< 0.0007	u	< 0.4203	u	< 0.0202	u	< 0.0006	u	0.00234	J	< 0.093	u	< 0.0008	u
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0739	u	< 0.0035	u	< 0.0004	u	< 0.0003	u	< 0.0163	u	< 0.0005	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	0.000724	J	< 0.0004	u	< 0.0005	u	< 0.1608	u	< 0.0077	u	< 0.0004	u	< 0.0004	u	< 0.0356	u	< 0.0005	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.00075	u	< 0.00069	u	< 0.00085	u	41	v	0.3	v	< 0.00074	u	< 0.00068	u	1.5	v	< 0.00092	u
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	4.80E+00	(9)	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0494	u	< 0.0024	u	< 0.0004	u	< 0.0003	u	< 0.0109	u	< 0.0005	u
4-Isopropyltoluene	-	-	-	-	-	-	< 0.0007	u	< 0.0007	u	< 0.0009	u	0.95	v	0.014	J	< 0.0007	u	< 0.0007	u	< 0.0103	u	< 0.0009	u
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	< 0.0008	u	< 0.0008	u	< 0.0009	u	< 0.1134	u	< 0.0054	u	< 0.0008	u	< 0.0007	u	< 0.0251	u	< 0.001	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	0.0111	v	0.00723	J	0.00158	J	< 0.4875	u	< 0.0234	u	0.00466	J	0.0184	v	< 0.1078	u	0.00359	J
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	0.00239	v	0.0123	v	0.0149	v	0.2	J	0.047	v	0.0178	v	0.000788	J	< 0.0214	u	0.0159	v
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0485	u	< 0.0023	u	< 0.0005	u	< 0.0005	u	< 0.0107	u	< 0.0007	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0535	u	< 0.0026	u	< 0.0003	u	< 0.0002	u	< 0.0118	u	< 0.0003	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0526	u	< 0.0025	u	< 0.0005	u	< 0.0005	u	< 0.0116	u	< 0.0006	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	< 0.0011	u	< 0.0011	u	< 0.0013	u	< 0.1262	u	< 0.0061	u	< 0.0011	u	< 0.001	u	< 0.0279	u	< 0.0014	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	< 0.0009	u	< 0.0008	u	< 0.001	u	< 0.4705	u	< 0.0226	u	< 0.0009	u	< 0.0008	u	< 0.104	u	< 0.0011	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0637	u	< 0.0031	u	< 0.0003	u	< 0.0003	u	< 0.0141	u	< 0.0004	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0503	u	< 0.0024	u	< 0.0002	u	< 0.0002	u	< 0.0111	u	< 0.0002	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	< 0.0019	u	< 0.0018	u	< 0.0022	u	< 0.506	u	< 0.0243	u	< 0.0019	u	< 0.0018	u	< 0.1119	u	< 0.0024	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0681	u	< 0.0033	u	< 0.0004	u	< 0.0004	u	< 0.0151	u	< 0.0005	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0757	u	< 0.0036	u	< 0.0002	u	< 0.0002	u	< 0.0167	u	< 0.0003	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0827	u	< 0.004	u	< 0.0005	u	< 0.0005	u	< 0.0183	u	< 0.0006	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0019	u	< 0.0018	u	< 0.0022	u	< 0.0454	u	< 0.0022	u	< 0.0019	u	< 0.0018	u	< 0.01	u	< 0.0024	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.049	u	< 0.0024	u	< 0.0002	u	< 0.0002	u	< 0.0108	u	< 0.0003	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-7 (2-4')		SWMU 10-7 (4-6')		SWMU 10-7 (18-20')		SWMU 10-8 (2-4')		SWMU 10-8 (4-6')		SWMU 10-8 (18-20')		SWMU 10-9 (2-4')		SWMU 10-9 (4-6')		SWMU 10-9 (18-20')	
							1505059-001		1505059-002		1505059-003		1505057-005		1505057-006		1505057-007		1505057-001		1505057-002		1505057-003	
							5/1/2015		5/1/2015		5/1/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015	
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	< 0.0011	u	< 0.001	u	< 0.0012	u	< 0.0688	u	< 0.0033	u	< 0.0011	u	< 0.001	u	< 0.0152	u	< 0.0013	u
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.1644	u	< 0.0079	u	< 0.0008	u	< 0.0007	u	< 0.0364	u	< 0.001	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	0.000502	J	0.00188	v	0.00213	J	1.4	v	0.044	v	0.00285	v	< 0.0003	u	0.04	J	0.00242	v
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.00038	u	< 0.00035	u	< 0.00044	u	< 0.09078	u	< 0.00435	u	< 0.00038	u	< 0.00035	u	< 0.02007	u	< 0.00047	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	< 0.0004	u	< 0.0004	u	< 0.0005	u	0.52	J	0.012	J	0.000447	J	< 0.0004	u	0.016	J	< 0.0005	u
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	0.0014	J	0.000891	J	< 0.0009	u	< 0.0925	u	< 0.0044	u	< 0.0008	u	< 0.0007	u	< 0.0204	u	< 0.001	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	0.000637	J	0.000686	J	0.000704	J	< 0.2615	u	< 0.0125	u	< 0.0005	u	0.000438	J	< 0.0578	u	< 0.0006	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.00063	u	< 0.00058	u	< 0.00071	u	7.8	v	0.14	v	0.000809	J	< 0.00057	u	0.32	v	0.000873	J
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	< 0.0008	u	< 0.0007	u	< 0.0009	u	1.2	J	0.023	J	< 0.0008	u	< 0.0007	u	0.065	J	< 0.001	u
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	< 0.0004	u	< 0.0003	u	< 0.0004	u	0.85	v	0.026	J	0.000428	J	< 0.0003	u	0.052	J	< 0.0004	u
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	< 0.0005	u	0.00065	J	0.000792	J	0.51	J	0.011	J	0.000714	J	< 0.0004	u	0.021	J	0.000849	J
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.12	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0265	u	< 0.0004	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0749	u	< 0.0036	u	< 0.0003	u	< 0.0003	u	< 0.0166	u	< 0.0004	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0566	u	< 0.0027	u	< 0.0004	u	< 0.0003	u	< 0.0125	u	< 0.0005	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	0.00181	J	0.00801	v	0.00962	v	0.48	J	< 0.0037	u	0.0122	v	0.000797	J	< 0.0172	u	0.0115	v
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0425	u	< 0.002	u	< 0.0003	u	< 0.0003	u	< 0.0094	u	< 0.0004	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.1177	u	< 0.0056	u	< 0.0002	u	< 0.0002	u	< 0.026	u	< 0.0003	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0637	u	< 0.0031	u	< 0.0004	u	< 0.0003	u	< 0.0141	u	< 0.0005	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.1973	u	< 0.0095	u	< 0.0004	u	< 0.0004	u	< 0.0436	u	< 0.0005	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.2615	u	< 0.0125	u	< 0.0002	u	< 0.0002	u	< 0.0578	u	< 0.0003	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	0.00146	J	0.00622	v	0.00711	v	13	v	0.016	J	0.00872	v	< 0.001	u	0.26	J	0.00807	v
Semi-volatiles (mg/kg)																								
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.2417	u	< 0.1213	u	< 0.12	u	< 1.1646	u	< 0.1185	u	< 0.1177	u	< 1.0207	u	< 1.017	u	< 0.1186	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.2259	u	< 0.1134	u	< 0.1121	u	< 1.0882	u	< 0.1107	u	< 0.11	u	< 0.9537	u	< 0.9502	u	< 0.1108	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.2097	u	< 0.1053	u	< 0.1041	u	< 1.0104	u	< 0.1028	u	< 0.1021	u	< 0.8856	u	< 0.8824	u	< 0.1029	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.247	u	< 0.124	u	< 0.1226	u	< 1.1899	u	< 0.1211	u	< 0.1202	u	< 1.0429	u	< 1.0391	u	< 0.1212	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.2189	u	< 0.1099	u	< 0.1087	u	68	v	0.26	v	< 0.1066	u	< 0.9242	u	1.1	J	< 0.1074	u
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	< 0.2752	u	< 0.1381	u	< 0.1366	u	< 1.3258	u	< 0.1349	u	< 0.134	u	< 1.162	u	< 1.1577	u	< 0.135	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	< 0.273	u	< 0.137	u	< 0.1355	u	< 1.3153	u	< 0.1338	u	< 0.1329	u	< 1.1528	u	< 1.1485	u	< 0.134	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	< 0.2361	u	< 0.1185	u	< 0.1172	u	< 1.1377	u	< 0.1158	u	< 0.115	u	< 0.9971	u	< 0.9934	u	< 0.1159	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	< 0.1856	u	< 0.0932	u	< 0.0921	u	< 0.8942	u	< 0.091	u	< 0.0904	u	< 0.7838	u	< 0.7809	u	< 0.0911	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	< 0.0981	u	< 0.0492	u	< 0.0487	u	< 0.4727	u	< 0.0481	u	< 0.0478	u	< 0.4143	u	< 0.4128	u	< 0.0481	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	< 0.2113	u	< 0.106	u	< 0.1049	u	< 1.0178	u	< 0.1036	u	< 0.1028	u	< 0.892	u	< 0.8888	u	< 0.1037	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	< 0.2625	u	< 0.1317	u	< 0.1303	u	< 1.2646	u	< 0.1287	u	< 0.1278	u	< 1.1083	u	< 1.1043	u	< 0.1288	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	< 0.253	u	< 0.127	u	< 0.1256	u	< 1.2189	u	< 0.124	u	< 0.1232	u	< 1.0683	u	< 1.0644	u	< 0.1241	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	< 0.2204	u	< 0.1106	u	< 0.1094	u	< 1.0617	u	< 0.108	u	< 0.1073	u	< 0.9305	u	< 0.9271	u	< 0.1081	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.2161	u	< 0.1085	u	< 0.1073	u	89	v	0.35	v	< 0.1052	u	< 0.9125	u	1	J	< 0.106	u
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	< 0.2367	u	< 0.1188	u	< 0.1175	u	< 1.1405	u	< 0.1161	u	< 0.1152	u	< 0.9996	u	< 0.996	u	< 0.1162	u
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	< 0.2687	u	< 0.1349	u	< 0.1334	u	< 1.2945	u	< 0.1317	u	< 0.1308	u	< 1.1346	u	< 1.1304	u	< 0.1318	u
2-Nitrophenol	-	-	-	-	-	-	< 0.2123	u	< 0.1065	u	< 0.1054	u	< 1.0225	u	< 0.1041	u	< 0.1033	u	< 0.8962	u	< 0.8929	u	< 0.1041	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	< 0.1818	u	< 0.0913	u	< 0.0903	u	< 0.876	u	< 0.0891	u	< 0.0885	u	< 0.7678	u	< 0.765	u	< 0.0892	u
3+4-Methylphenol	-	-	-	-	-	-	< 0.2448	u	< 0.1228	u	< 0.1215	u	< 1.1791	u	< 0.12	u	< 0.1191	u	< 1.0334	u	< 1.0296	u	< 0.1201	u
3-Nitroaniline	-	-	-	-	-	-	< 0.2275	u	< 0.1142	u	< 0.1129	u	< 1.0961	u	< 0.1115	u	< 0.1108	u	< 0.9607	u	< 0.9572	u	< 0.1116	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	< 0.1284	u	< 0.0644	u	< 0.0637	u	< 0.6186	u	< 0.0629	u	< 0.0625	u	< 0.5422	u	< 0.5402	u	< 0.063	u
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 0.2505	u	< 0.1258	u	< 0.1244	u	< 1.207	u	< 0.1228	u	< 0.122	u	< 1.0579	u	< 1.054	u	< 0.1229	u
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 0.2351	u	< 0.118	u	< 0.1167	u	< 1.1327	u	< 0.1153	u	< 0.1145	u	< 0.9928	u	< 0.9892	u	< 0.1154	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	< 0.2184	u	< 0.1096	u	< 0.1084	u	< 1.0521	u	< 0.1071	u	< 0.1063	u	< 0.9221	u	< 0.9187	u	< 0.1072	u
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 0.3516	u	< 0.1765	u	< 0.1745	u	< 1.6941	u	< 0.1724	u	< 0.1712	u	< 1.4847	u	< 1.4793	u	< 0.1725	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	< 0.2121	u	< 0.1065	u	< 0.1053	u	< 1.0218	u	< 0.104	u	< 0.1033	u	< 0.8956	u	< 0.8923	u	< 0.1041	u
4-Nitrophenol	-	-	-	-	-	-	< 0.2035	u	< 0.1021	u	< 0.101	u	< 0.9802	u	< 0.0997	u	< 0.099	u	< 0.8591	u	< 0.8559	u	< 0.0998	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	< 0.2878	u	< 0.1444	u	< 0.1428	u	< 1.3863	u	< 0.1411	u	< 0.1401	u	< 1.215	u	< 1.2106	u	< 0.1412	u
Acenaphthylene	-	-	-	-	-	-	< 0.2392	u	< 0.1201	u	< 0.1187	u	< 1.1525	u	< 0.1173	u	< 0.1165	u	< 1.0101	u	< 1.0064	u	< 0.1174	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	< 0.2056	u	< 0.1032	u	< 0.102	u	< 0.9902	u	< 0.1008	u	< 0.1001	u	< 0.8679	u	< 0.8647	u	< 0.1009	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	< 0.2006	u	< 0.1007	u	< 0.0996	u	< 0.9664	u	< 0.0983	u	< 0.0976	u	< 0.847	u	< 0.8439	u	< 0.0984	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	< 0.2647	u	< 0.1329	u	< 0.1314	u	< 1.2753	u	< 0.1298	u	< 0.1289	u	< 1.1178	u	< 1.1137	u	< 0.1299	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	< 0.1856	u	< 0.0932	u	< 0.0921	u	< 0.8941	u	< 0.091	u	< 0.0904	u	< 0.7837	u	< 0.7808	u	< 0.0911	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	< 0.265	u	< 0.133	u	< 0.1315	u	< 1.2767	u	< 0.1299	u	< 0.129	u	< 1.119	u	< 1.1149	u	< 0.13	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	< 0.2242	u	< 0.1126	u	< 0.1113	u	< 1.0803	u	< 0.1099	u	< 0.1092	u	< 0.9468	u	< 0.9434	u	< 0.11	u
Benzo(g,h,i)perylene	-	-	-	-	-	-	< 0.2687	u	< 0.1349	u	< 0.1334	u	< 1.2946	u	< 0.1317	u	< 0.1308	u	< 1.1347	u	< 1.1305	u	< 0.1318	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	< 0.2669	u	< 0.1339	u	< 0.1325	u	< 1.2857	u	< 0.1308	u	< 0.1299	u	< 1.1268	u	< 1.1227	u	< 0.1309	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	< 0.1346	u	< 0.0675	u	< 0.0668	u	< 0.6482	u	< 0.066	u	< 0.0655	u	< 0.5681	u	< 0.5661	u	< 0.066	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	< 0.2098	u	< 0.1053	u	< 0.1041	u	< 1.0105	u	< 0.1028	u	< 0.1021	u	< 0.8857	u	< 0.8824	u	< 0.1029	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	< 0.2254	u	< 0.1131	u	< 0.1119	u	< 1.0858	u	< 0.1105	u	< 0.1097	u	< 0.9516	u	< 0.9482	u	< 0.1106	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	< 0.2333	u	< 0.1171	u	< 0.1158	u	< 1.1241	u	< 0.1144	u	< 0.1136	u	< 0.9852	u	< 0.9816	u	< 0.1145	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-7 (2-4')		SWMU 10-7 (4-6')		SWMU 10-7 (18-20')		SWMU 10-8 (2-4')		SWMU 10-8 (4-6')		SWMU 10-8 (18-20')		SWMU 10-9 (2-4')		SWMU 10-9 (4-6')		SWMU 10-9 (18-20')	
							1505059-001		1505059-002		1505059-003		1505057-005		1505057-006		1505057-007		1505057-001		1505057-002		1505057-003	
							5/1/2015		5/1/2015		5/1/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015		4/30/2015	
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	< 0.1804	u	< 0.0905	u	< 0.0895	u	< 0.8691	u	< 0.0884	u	< 0.0878	u	< 0.7617	u	< 0.759	u	< 0.0885	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	< 0.2653	u	< 0.1332	u	< 0.1317	u	< 1.2781	u	< 0.1301	u	< 0.1292	u	1.5	J	< 1.1161	u	< 0.1302	u
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	< 0.2883	u	< 0.1447	u	< 0.1431	u	< 1.3889	u	< 0.1413	u	< 0.1403	u	< 1.2173	u	< 1.2128	u	< 0.1414	u
Carbazole	-	-	-	-	-	-	< 0.2199	u	< 0.1104	u	< 0.1092	u	< 1.0596	u	< 0.1078	u	< 0.1071	u	< 0.9286	u	< 0.9253	u	< 0.1079	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	< 0.2371	u	< 0.119	u	< 0.1177	u	< 1.1424	u	< 0.1162	u	< 0.1154	u	< 1.0012	u	< 0.9976	u	< 0.1163	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	< 0.2558	u	< 0.1284	u	< 0.127	u	< 1.2325	u	< 0.1254	u	< 0.1245	u	< 1.0802	u	< 1.0763	u	< 0.1255	u
Dibenzofuran	-	-	-	-	-	-	< 0.2526	u	< 0.1268	u	< 0.1254	u	< 1.2167	u	< 0.1238	u	< 0.1229	u	< 1.0664	u	< 1.0625	u	< 0.1239	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	< 0.268	u	< 0.1345	u	< 0.133	u	< 1.2911	u	< 0.1314	u	< 0.1305	u	< 1.1316	u	< 1.1275	u	< 0.1315	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	< 0.2173	u	< 0.1091	u	< 0.1079	u	< 1.047	u	< 0.1065	u	< 0.1058	u	< 0.9176	u	< 0.9143	u	< 0.1066	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	< 0.2671	u	< 0.134	u	< 0.1326	u	< 1.2866	u	< 0.1309	u	< 0.13	u	< 1.1276	u	< 1.1235	u	< 0.131	u
Di-n-octyl phthalate	-	-	-	-	-	-	< 0.2629	u	< 0.1319	u	< 0.1305	u	< 1.2665	u	< 0.1289	u	< 0.128	u	< 1.11	u	< 1.1059	u	< 0.129	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	< 0.2866	u	< 0.1438	u	< 0.1422	u	< 1.3805	u	< 0.1405	u	< 0.1395	u	< 1.2099	u	< 1.2055	u	< 0.1406	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	< 0.3215	u	< 0.1614	u	< 0.1596	u	8.1	v	< 0.1576	u	< 0.1565	u	< 1.3574	u	< 1.3524	u	< 0.1577	u
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	< 0.2229	u	< 0.1119	u	< 0.1106	u	< 1.0737	u	< 0.1093	u	< 0.1085	u	< 0.9411	u	< 0.9376	u	< 0.1094	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.2336	u	< 0.1173	u	< 0.116	u	< 1.1255	u	< 0.1145	u	< 0.1137	u	< 0.9865	u	< 0.9829	u	< 0.1146	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	< 0.1638	u	< 0.0822	u	< 0.0813	u	< 0.7891	u	< 0.0803	u	< 0.0797	u	< 0.6916	u	< 0.6891	u	< 0.0804	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	< 0.2102	u	< 0.1055	u	< 0.1043	u	< 1.0127	u	< 0.1031	u	< 0.1023	u	< 0.8875	u	< 0.8843	u	< 0.1031	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	< 0.2684	u	< 0.1347	u	< 0.1332	u	< 1.2929	u	< 0.1316	u	< 0.1306	u	< 1.1331	u	< 1.129	u	< 0.1317	u
Isophorone	5.61E+03	(1)	2.70E+04	(4)	4.22E+00	(8)	< 0.2518	u	< 0.1264	u	< 0.125	u	< 1.2129	u	< 0.1234	u	< 0.1226	u	< 1.0631	u	< 1.0592	u	< 0.1235	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.2247	u	< 0.1128	u	< 0.1115	u	18	v	0.15	J	< 0.1094	u	< 0.9487	u	< 0.9453	u	< 0.1102	u
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	< 0.2431	u	< 0.122	u	< 0.1207	u	< 1.1713	u	< 0.1192	u	< 0.1184	u	< 1.0266	u	< 1.0228	u	< 0.1193	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	< 0.2448	u	< 0.1229	u	< 0.1215	u	< 1.1792	u	< 0.12	u	< 0.1192	u	< 1.0335	u	< 1.0297	u	< 0.1201	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	< 0.2114	u	< 0.1061	u	< 0.1049	u	< 1.0185	u	< 0.1036	u	< 0.1029	u	< 0.8927	u	< 0.8894	u	< 0.1037	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	< 0.1474	u	< 0.074	u	< 0.0732	u	< 0.7103	u	< 0.0723	u	< 0.0718	u	< 0.6225	u	< 0.6203	u	< 0.0723	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	< 0.247	u	< 0.124	u	< 0.1226	u	15	v	< 0.1211	u	< 0.1203	u	< 1.0431	u	< 1.0393	u	< 0.1212	u
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	< 0.2116	u	< 0.1062	u	< 0.105	u	< 1.0196	u	< 0.1038	u	< 0.103	u	< 0.8936	u	< 0.8903	u	< 0.1038	u
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	< 0.3048	u	< 0.153	u	< 0.1513	u	< 1.4683	u	< 0.1494	u	< 0.1484	u	< 1.2868	u	< 1.2822	u	< 0.1495	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	< 0.1984	u	< 0.0996	u	< 0.0985	u	< 0.956	u	< 0.0973	u	< 0.0966	u	< 0.8378	u	< 0.8348	u	< 0.0974	u
Total Petroleum Hydrocarbons (mg/kg)																								
Gasoline Range Organics (GRO)	-		-		-		< 1	u	< 1	u	< 1	u	670	v	10	v	< 1	u	< 1	u	12	J	< 1	u
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-		39	v	< 6	u	< 5	u	**9700**	v	25	v	< 6.3	u	210	v	300	v	< 6.2	u
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-		< 49	u	< 50	u	< 49	u	**2000**	v	< 56	u	< 57	u	170	v	120	v	< 56	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 20
(9) SoilGW Risk-based EPA DAF = 20
(10) SoilGW MCL-based EPA DAF = 20
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-10 (2-4')		SWMU 10-10 (4-6')		SWMU 10-10 (18-20')		SWMU 10-11 (4-6')		SWMU 10-11 (8-10')		SWMU 10-11 (18-20')		SWMU 10-12 (6-8')		SWMU 10-12 (20-22')		SWMU 10-13 (2-4')	
							1505058-001		1505058-002		1505058-003		1505570-003		1505570-004		1505570-003		1505617-001		1505617-002		1505617-003	
							4/30/2015		4/30/2015		4/30/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/13/2015	
Metals (mg/kg)																								
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	< 1.4463	u	< 1.5493	u	2.7	J	< 1.4896	u	< 3.243	u	< 3.0138	u	< 2.9662	u	< 1.4434	u	< 1.4296	u
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	2.4	J	1.6	J	1.9	J	< 0.3324	u	0.91	J	0.84	J	1.9	J	2	J	1.3	J
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	450	v	360	v	240	v	240	v	330	v	420	v	1700	v	500	v	260	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	0.28	v	0.93	v	1	v	0.61	v	0.98	v	0.89	v	1.1	v	0.94	v	0.71	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	< 0.0305	u	< 0.0327	u	< 0.0322	u	< 0.0314	u	< 0.0685	u	< 0.0318	u	< 0.0313	u	< 0.0305	u	< 0.0302	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	13	v	12	v	14	v	7.3	v	8.1	v	11	v	12	v	14	v	7.8	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	9.68E-02	(8)	< 2.2802	u	< 2.4258	u	< 2.3458	u	< 2.2359	u	< 2.4211	u	< 2.2794	u	< 2.3277	u	< 2.1955	u	< 2.1284	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	3.1	v	4.1	v	7.9	v	3.5	v	5	v	7.7	v	5.7	v	9.1	v	4	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	< 0.285	u	< 0.3032	u	< 0.2932	u	< 0.2795	u	< 0.3026	u	< 0.2849	u	< 0.291	u	< 0.2744	u	< 0.2661	u
Iron	5.50E+04	(2)	8.20E+05	(6)	7.00E+03	(9)	9200	v	13000	v	20000	v	9200	v	12000	v	16000	v	21000	v	20000	v	15000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	4.1	v	4	v	2	v	3.4	v	5.8	v	3.5	v	3.7	v	1.8	v	2.9	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	5.60E+02	(9)	94	v	170	v	990	v	320	v	400	v	890	v	470	v	1300	v	390	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	0.044	v	0.012	J	< 0.0032	u	0.05	v	0.014	J	< 0.0032	u	< 0.0034	u	< 0.0032	u	< 0.003	u
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	4.4	v	7.7	v	17	v	5.8	v	7.8	v	13	v	10	v	16	v	6.5	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E+01	(8)	< 1.6842	u	< 1.8042	u	< 1.7762	u	< 1.7346	u	< 3.7764	u	< 1.7547	u	< 1.727	u	< 1.6808	u	< 1.6647	u
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	< 0.0327	u	< 0.0351	u	< 0.0345	u	< 0.0337	u	< 0.0734	u	< 0.0341	u	< 0.0336	u	< 0.0327	u	< 0.0323	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	21	v	18	v	21	v	13	v	14	v	5.2	v	21	v	25	v	19	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	15	v	19	v	25	v	16	v	18	v	23	v	20	v	28	v	13	v
Volatiles (mg/kg)																								
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	< 0.0003	u	< 0.0489	u	< 0.0003	u	< 0.0129	u	< 0.0027	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	< 0.0002	u	< 0.0905	u	< 0.0003	u	< 0.0238	u	< 0.0049	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	< 0.0004	u	< 0.0722	u	< 0.0004	u	< 0.019	u	< 0.0039	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	< 0.0016	u	< 0.0716	u	< 0.0019	u	< 0.0189	u	< 0.0039	u	< 0.0024	u	< 0.0023	u	< 0.0028	u	< 0.0025	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	< 0.0004	u	< 0.2384	u	< 0.0004	u	< 0.0628	u	< 0.0129	u	< 0.0006	u	< 0.0005	u	< 0.0006	u	< 0.0006	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	< 0.0003	u	< 0.041	u	< 0.0003	u	< 0.0108	u	< 0.0022	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u
1,1-Dichloropropene	-	-	-	-	-	-	< 0.0003	u	< 0.0888	u	< 0.0003	u	< 0.0234	u	< 0.0048	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	< 0.0006	u	< 0.1272	u	< 0.0007	u	< 0.0335	u	< 0.0069	u	< 0.0009	u	< 0.0009	u	< 0.001	u	< 0.0009	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	< 0.0006	u	< 0.1	u	< 0.0007	u	< 0.0263	u	< 0.0054	u	< 0.0009	u	< 0.0008	u	< 0.001	u	< 0.0009	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.00059	u	< 0.10998	u	< 0.00069	u	< 0.02897	u	< 0.00596	u	< 0.0009	u	< 0.00087	u	< 0.00103	u	< 0.00093	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	< 0.0004	u	13	v	0.00238	v	0.4	v	0.79	v	0.00377	v	< 0.0006	u	0.00203	J	< 0.0007	u
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	< 0.0005	u	< 0.1024	u	< 0.0005	u	< 0.027	u	< 0.0056	u	< 0.0007	u	< 0.0007	u	< 0.0008	u	< 0.0007	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	< 0.0002	u	< 0.0475	u	< 0.0002	u	< 0.0125	u	< 0.0026	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.00035	u	< 0.03595	u	< 0.00041	u	< 0.00947	u	< 0.00194	u	< 0.00053	u	< 0.00051	u	< 0.00061	u	< 0.00055	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	< 0.0004	u	< 0.2384	u	< 0.0005	u	< 0.0628	u	< 0.0129	u	< 0.0007	u	< 0.0006	u	< 0.0007	u	< 0.0007	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	< 0.0003	u	< 0.0333	u	< 0.0004	u	< 0.0088	u	< 0.0018	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	< 0.0003	u	4.7	v	0.00151	J	0.31	v	0.29	v	0.00245	v	< 0.0004	u	0.00134	J	< 0.0004	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.00027	u	< 0.07018	u	< 0.00031	u	< 0.01848	u	< 0.0038	u	< 0.00041	u	< 0.00039	u	< 0.00046	u	< 0.00042	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	< 0.0002	u	< 0.0821	u	< 0.0003	u	< 0.0216	u	< 0.0045	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.00025	u	< 0.07423	u	< 0.00029	u	< 0.01955	u	< 0.00402	u	< 0.00038	u	< 0.00036	u	< 0.00043	u	< 0.00039	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.00062	u	28	v	< 0.00072	u	1.6	v	1.3	v	0.00126	J	< 0.00091	u	< 0.00108	u	< 0.00097	u
2,2-Dichloropropane	-	-	-	-	-	-	< 0.0003	u	< 0.0868	u	< 0.0003	u	< 0.0229	u	< 0.0047	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	0.00161	J	< 0.3832	u	0.00159	J	< 0.1009	u	< 0.0208	u	< 0.0008	u	0.00208	J	0.00234	J	0.00424	J
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	< 0.0003	u	< 0.0674	u	< 0.0004	u	< 0.0177	u	< 0.0037	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	0.000582	J	< 0.1466	u	< 0.0004	u	< 0.0386	u	< 0.0079	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	0.000962	J
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.00062	u	48	v	< 0.00072	u	1.8	v	2.3	v	0.0013	J	< 0.00091	u	< 0.00107	u	< 0.00097	u
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	4.80E+00	(9)	< 0.0003	u	< 0.0451	u	< 0.0004	u	< 0.0119	u	< 0.0024	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u
4-Isopropyltoluene	-	-	-	-	-	-	< 0.0006	u	0.74	v	< 0.0007	u	< 0.0112	u	< 0.0023	u	< 0.0009	u	< 0.0009	u	< 0.0011	u	< 0.001	u
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	< 0.0007	u	< 0.1034	u	< 0.0008	u	< 0.0272	u	< 0.0056	u	< 0.001	u	< 0.001	u	< 0.0012	u	< 0.0011	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	0.00792	J	< 0.4444	u	0.00422	J	0.15	J	0.058	J	0.00262	J	0.00766	J	0.0074	J	0.0451	v
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	< 0.0004	u	0.2	J	0.018	v	< 0.0233	u	< 0.0048	u	0.026	v	0.00132	J	0.0154	v	0.000909	J
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	< 0.0004	u	< 0.0442	u	< 0.0005	u	< 0.0117	u	< 0.0024	u	< 0.0007	u	< 0.0007	u	< 0.0008	u	< 0.0007	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	< 0.0002	u	< 0.0487	u	< 0.0003	u	< 0.0128	u	< 0.0026	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	< 0.0004	u	< 0.0479	u	< 0.0005	u	< 0.0126	u	< 0.0026	u	< 0.0006	u	< 0.0006	u	< 0.0007	u	< 0.0006	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	< 0.0009	u	< 0.115	u	< 0.0011	u	0.12	J	0.026	J	< 0.0014	u	< 0.0014	u	< 0.0016	u	< 0.0015	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	< 0.0007	u	< 0.4289	u	< 0.0008	u	< 0.113	u	< 0.0233	u	< 0.0011	u	< 0.0011	u	< 0.0012	u	< 0.0011	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	< 0.0003	u	< 0.058	u	< 0.0003	u	< 0.0153	u	< 0.0031	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	< 0.0002	u	< 0.0459	u	< 0.0002	u	< 0.0121	u	< 0.0025	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0003	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	< 0.0016	u	< 0.4614	u	< 0.0019	u	< 0.1215	u	< 0.025	u	< 0.0024	u	< 0.0023	u	< 0.0028	u	< 0.0025	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	< 0.0003	u	< 0.0621	u	< 0.0004	u	< 0.0164	u	< 0.0034	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	< 0.0002	u	< 0.069	u	< 0.0002	u	< 0.0182	u	< 0.0037	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	< 0.0004	u	< 0.0754	u	< 0.0005	u	< 0.0199	u	< 0.0041	u	< 0.0006	u	< 0.0006	u	< 0.0007	u	< 0.0007	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0016	u	< 0.0414	u	< 0.0019	u	< 0.0109	u	< 0.0022	u	< 0.0024	u	< 0.0023	u	< 0.0028	u	< 0.0025	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	< 0.0002	u	< 0.0447	u	< 0.0002	u	< 0.0118	u	< 0.0024	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-10 (2-4')		SWMU 10-10 (4-6')		SWMU 10-10 (18-20')		SWMU 10-11 (4-6')		SWMU 10-11 (8-10')		SWMU 10-11 (18-20')		SWMU 10-12 (6-8')		SWMU 10-12 (20-22')		SWMU 10-13 (2-4')	
							1505058-001		1505058-002		1505058-003		1505570-003		1505570-004		1505570-003		1505617-001		1505617-002		1505617-003	
							4/30/2015		4/30/2015		4/30/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/13/2015	
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	< 0.0009	u	< 0.0628	u	< 0.0011	u	< 0.0165	u	< 0.0034	u	< 0.0014	u	< 0.0013	u	< 0.0016	u	< 0.0014	u
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	< 0.0007	u	< 0.1499	u	< 0.0008	u	< 0.0395	u	< 0.0081	u	< 0.001	u	< 0.001	u	< 0.0011	u	< 0.001	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	< 0.0003	u	3.6	v	0.00241	v	0.1	J	0.21	v	0.00371	v	< 0.0004	u	0.00249	J	< 0.0004	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.00032	u	< 0.08276	u	< 0.00037	u	< 0.0218	u	< 0.00448	u	< 0.00048	u	< 0.00047	u	< 0.00055	u	< 0.0005	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	< 0.0004	u	1.2	v	< 0.0004	u	0.04	J	0.077	v	0.000607	J	< 0.0005	u	< 0.0006	u	< 0.0006	u
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	< 0.0007	u	< 0.0843	u	< 0.0008	u	< 0.0222	u	< 0.0046	u	< 0.001	u	< 0.001	u	< 0.0012	u	< 0.001	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	0.00051	J	< 0.2384	u	< 0.0005	u	< 0.0628	u	< 0.0129	u	0.000813	J	< 0.0006	u	< 0.0007	u	0.000685	J
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.00052	u	11	v	0.000725	J	0.54	v	0.46	v	0.00119	J	< 0.00076	u	< 0.0009	u	< 0.00081	u
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	< 0.0007	u	1.4	J	< 0.0008	u	0.063	J	0.098	v	< 0.001	u	< 0.001	u	< 0.0011	u	< 0.001	u
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	< 0.0003	u	1.8	v	0.000372	J	0.057	J	0.12	v	0.00068	J	< 0.0004	u	< 0.0005	u	< 0.0005	u
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	< 0.0004	u	0.75	v	0.000688	J	< 0.0224	u	0.051	v	0.000947	J	0.000831	J	0.000964	J	< 0.0006	u
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	< 0.0003	u	< 0.1094	u	< 0.0003	u	< 0.0288	u	< 0.0059	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	< 0.0002	u	< 0.0683	u	< 0.0003	u	< 0.018	u	< 0.0037	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	< 0.0003	u	< 0.0516	u	< 0.0004	u	< 0.0136	u	< 0.0028	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	0.000255	J	5	v	0.0104	v	0.021	J	0.02	J	0.0162	v	0.00101	J	0.0101	v	0.000885	J
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	< 0.0003	u	< 0.0387	u	< 0.0003	u	< 0.0102	u	< 0.0021	u	< 0.0004	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0002	u	< 0.1073	u	< 0.0002	u	< 0.0283	u	< 0.0058	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	< 0.0003	u	< 0.0581	u	< 0.0004	u	< 0.0153	u	< 0.0031	u	< 0.0005	u	< 0.0005	u	< 0.0005	u	< 0.0005	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	< 0.0003	u	< 0.1799	u	< 0.0004	u	< 0.0474	u	< 0.0098	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	< 0.0002	u	< 0.2384	u	< 0.0002	u	< 0.0628	u	< 0.0129	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	< 0.001	u	29	v	0.00797	v	0.73	v	1.7	v	0.0121	v	< 0.0014	u	0.00583	v	< 0.0015	u
Semi-volatiles (mg/kg)																								
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.2327	u	< 1.2417	u	< 0.1206	u	< 1.1468	u	< 1.2306	u	< 0.1164	u	< 0.1186	u	< 0.1125	u	< 0.1079	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.2175	u	< 1.1602	u	< 0.1126	u	< 1.0716	u	< 1.1499	u	< 0.1087	u	< 0.1108	u	< 0.1051	u	< 0.1009	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.2019	u	< 1.0774	u	< 0.1046	u	< 0.995	u	< 1.0678	u	< 0.101	u	< 0.1029	u	< 0.0976	u	< 0.0937	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.2378	u	< 1.2688	u	< 0.1232	u	< 1.1718	u	< 1.2575	u	< 0.1189	u	< 0.1211	u	< 0.1149	u	< 0.1103	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.2107	u	17	v	< 0.1092	u	14	v	3.8	v	< 0.1054	u	< 0.1074	u	< 0.1019	u	< 0.0977	u
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	< 0.265	u	< 1.4136	u	< 0.1372	u	< 1.3056	u	< 1.401	u	< 0.1325	u	< 0.135	u	< 0.1281	u	< 0.1229	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	< 0.2629	u	< 1.4024	u	< 0.1362	u	< 1.2952	u	< 1.3899	u	< 0.1314	u	< 0.1339	u	< 0.127	u	< 0.1219	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	< 0.2274	u	< 1.213	u	< 0.1178	u	< 1.1203	u	< 1.2022	u	< 0.1137	u	< 0.1158	u	< 0.1099	u	< 0.1054	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	< 0.1787	u	< 0.9535	u	< 0.0926	u	< 0.8806	u	< 0.945	u	< 0.0894	u	< 0.091	u	< 0.0864	u	< 0.0829	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	< 0.0945	u	< 0.504	u	< 0.0489	u	< 0.4655	u	< 0.4995	u	< 0.0472	u	< 0.0481	u	< 0.0457	u	< 0.0438	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	< 0.2034	u	< 1.0852	u	< 0.1054	u	< 1.0023	u	< 1.0755	u	< 0.1017	u	< 0.1036	u	< 0.0983	u	< 0.0943	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	< 0.2527	u	< 1.3483	u	< 0.1309	u	< 1.2453	u	< 1.3363	u	< 0.1264	u	< 0.1287	u	< 0.1222	u	< 0.1172	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	< 0.2436	u	< 1.2996	u	< 0.1262	u	< 1.2003	u	< 1.288	u	< 0.1218	u	< 0.1241	u	< 0.1177	u	< 0.113	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	< 0.2122	u	< 1.132	u	< 0.1099	u	< 1.0455	u	< 1.1219	u	< 0.1061	u	< 0.1081	u	< 0.1026	u	< 0.0984	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.2081	u	25	v	< 0.1078	u	23	v	5.7	v	< 0.104	u	< 0.106	u	< 0.1006	u	< 0.0965	u
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	< 0.2279	u	< 1.2161	u	< 0.1181	u	< 1.1231	u	< 1.2052	u	< 0.114	u	< 0.1161	u	< 0.1102	u	< 0.1057	u
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	< 0.2587	u	< 1.3802	u	< 0.134	u	< 1.2748	u	< 1.368	u	< 0.1294	u	< 0.1318	u	< 0.125	u	< 0.12	u
2-Nitrophenol	-	-	-	-	-	-	< 0.2044	u	< 1.0902	u	< 0.1059	u	< 1.0069	u	< 1.0805	u	< 0.1022	u	< 0.1041	u	< 0.0988	u	< 0.0948	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	< 0.1751	u	< 0.934	u	< 0.0907	u	< 0.8627	u	< 0.9257	u	< 0.0875	u	< 0.0892	u	< 0.0846	u	< 0.0812	u
3+4-Methylphenol	-	-	-	-	-	-	< 0.2356	u	< 1.2572	u	< 0.1221	u	< 1.1611	u	< 1.246	u	< 0.1178	u	< 0.12	u	< 0.1139	u	< 0.1093	u
3-Nitroaniline	-	-	-	-	-	-	< 0.2191	u	< 1.1687	u	< 0.1135	u	< 1.0794	u	< 1.1583	u	< 0.1095	u	< 0.1116	u	< 0.1059	u	< 0.1016	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	< 0.1236	u	< 0.6596	u	< 0.064	u	< 0.6092	u	< 0.6537	u	< 0.0618	u	< 0.063	u	< 0.0598	u	< 0.0573	u
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 0.2412	u	< 1.287	u	< 0.125	u	< 1.1886	u	< 1.2755	u	< 0.1206	u	< 0.1229	u	< 0.1166	u	< 0.1119	u
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 0.2264	u	< 1.2077	u	< 0.1173	u	< 1.1155	u	< 1.197	u	< 0.1132	u	< 0.1153	u	< 0.1094	u	< 0.105	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	< 0.2103	u	< 1.1218	u	< 0.1089	u	< 1.0361	u	< 1.1118	u	< 0.1051	u	< 0.1071	u	< 0.1016	u	< 0.0975	u
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 0.3386	u	< 1.8062	u	< 0.1754	u	< 1.6682	u	< 1.7902	u	< 0.1693	u	< 0.1725	u	< 0.1636	u	< 0.157	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	< 0.2042	u	< 1.0895	u	< 0.1058	u	< 1.0063	u	< 1.0798	u	< 0.1021	u	< 0.104	u	< 0.0987	u	< 0.0947	u
4-Nitrophenol	-	-	-	-	-	-	< 0.1959	u	< 1.0451	u	< 0.1015	u	< 0.9652	u	< 1.0358	u	< 0.0979	u	< 0.0998	u	< 0.0947	u	< 0.0908	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	< 0.2771	u	< 1.4781	u	< 0.1435	u	< 1.3652	u	< 1.465	u	< 0.1385	u	< 0.1411	u	< 0.1339	u	< 0.1285	u
Acenaphthylene	-	-	-	-	-	-	< 0.2303	u	< 1.2288	u	< 0.1193	u	< 1.1349	u	< 1.2178	u	< 0.1152	u	< 0.1173	u	< 0.1113	u	< 0.1068	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	< 0.1979	u	< 1.0558	u	< 0.1025	u	< 0.9751	u	< 1.0464	u	< 0.0989	u	< 0.1008	u	< 0.0957	u	< 0.0918	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	< 0.1931	u	< 1.0304	u	< 0.1	u	< 0.9516	u	< 1.0212	u	< 0.0966	u	< 0.0984	u	< 0.0933	u	< 0.0896	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	< 0.2549	u	< 1.3598	u	< 0.132	u	< 1.2559	u	< 1.3477	u	< 0.1274	u	< 0.1298	u	< 0.1232	u	< 0.1182	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	< 0.1787	u	< 0.9534	u	< 0.0926	u	< 0.8805	u	< 0.9449	u	< 0.0893	u	< 0.091	u	< 0.0864	u	< 0.0829	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	< 0.2552	u	< 1.3613	u	< 0.1322	u	< 1.2573	u	< 1.3492	u	< 0.1276	u	< 0.13	u	< 0.1233	u	< 0.1183	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	< 0.2159	u	< 1.1518	u	< 0.1118	u	< 1.0638	u	< 1.1416	u	< 0.1079	u	< 0.11	u	< 0.1044	u	< 0.1001	u
Benzo(g,h,i)perylene	-	-	-	-	-	-	< 0.2587	u	< 1.3803	u	< 0.134	u	< 1.2749	u	< 1.3681	u	< 0.1294	u	< 0.1318	u	< 0.1251	u	< 0.12	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	< 0.2569	u	< 1.3708	u	< 0.1331	u	< 1.2661	u	< 1.3586	u	< 0.1285	u	< 0.1309	u	< 0.1242	u	< 0.1192	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	< 0.1295	u	< 0.6912	u	< 0.0671	u	< 0.6383	u	< 0.685	u	< 0.0648	u	< 0.066	u	< 0.0626	u	< 0.0601	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	< 0.202	u	< 1.0774	u	< 0.1046	u	< 0.9951	u	< 1.0679	u	< 0.101	u	< 0.1029	u	< 0.0976	u	< 0.0937	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	< 0.217	u	< 1.1577	u	< 0.1124	u	< 1.0692	u	< 1.1474	u	< 0.1085	u	< 0.1105	u	< 0.1049	u	< 0.1006	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	< 0.2247	u	< 1.1986	u	< 0.1164	u	< 1.107	u	< 1.1879	u	< 0.1123	u	< 0.1144	u	< 0.1086	u	< 0.1042	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-10 (2-4')		SWMU 10-10 (4-6')		SWMU 10-10 (18-20')		SWMU 10-11 (4-6')		SWMU 10-11 (8-10')		SWMU 10-11 (18-20')		SWMU 10-12 (6-8')		SWMU 10-12 (20-22')		SWMU 10-13 (2-4')	
							1505058-001		1505058-002		1505058-003		1505570-003		1505570-004		1505570-003		1505617-001		1505617-002		1505617-003	
							4/30/2015		4/30/2015		4/30/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/12/2015		5/13/2015	
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	< 0.1737	u	< 0.9267	u	< 0.09	u	< 0.8559	u	< 0.9184	u	< 0.0868	u	< 0.0885	u	< 0.084	u	< 0.0806	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	< 0.2554	u	< 1.3628	u	< 0.1323	u	< 1.2586	u	< 1.3506	u	< 0.1277	u	< 0.1301	u	< 0.1235	u	< 0.1185	u
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	< 0.2776	u	< 1.4808	u	< 0.1438	u	< 1.3677	u	< 1.4677	u	< 0.1388	u	< 0.1414	u	< 0.1342	u	< 0.1287	u
Carbazole	-	-	-	-	-	-	< 0.2118	u	< 1.1297	u	< 0.1097	u	< 1.0434	u	< 1.1197	u	< 0.1059	u	< 0.1079	u	< 0.1023	u	< 0.0982	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	< 0.2283	u	< 1.218	u	< 0.1183	u	< 1.1249	u	< 1.2072	u	< 0.1141	u	< 0.1163	u	< 0.1103	u	< 0.1059	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	< 0.2463	u	< 1.3141	u	< 0.1276	u	< 1.2137	u	< 1.3025	u	< 0.1232	u	< 0.1255	u	< 0.1191	u	< 0.1142	u
Dibenzofuran	-	-	-	-	-	-	< 0.2432	u	< 1.2973	u	< 0.126	u	< 1.1981	u	< 1.2857	u	< 0.1216	u	< 0.1239	u	< 0.1175	u	< 0.1128	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	< 0.258	u	< 1.3766	u	< 0.1337	u	< 1.2714	u	< 1.3644	u	< 0.129	u	< 0.1314	u	< 0.1247	u	< 0.1197	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	< 0.2092	u	< 1.1163	u	< 0.1084	u	< 1.031	u	< 1.1064	u	< 0.1046	u	< 0.1066	u	< 0.1011	u	< 0.097	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	< 0.2571	u	< 1.3718	u	< 0.1332	u	< 1.267	u	< 1.3596	u	< 0.1286	u	< 0.131	u	< 0.1243	u	< 0.1192	u
Di-n-octyl phthalate	-	-	-	-	-	-	< 0.2531	u	< 1.3503	u	< 0.1311	u	< 1.2472	u	< 1.3383	u	< 0.1266	u	< 0.1289	u	< 0.1223	u	< 0.1174	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	< 0.2759	u	< 1.4719	u	< 0.1429	u	< 1.3595	u	< 1.4588	u	< 0.1379	u	< 0.1405	u	< 0.1334	u	< 0.128	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	< 0.3095	u	2.2	J	< 0.1603	u	1.8	J	< 1.6366	u	< 0.1548	u	< 0.1577	u	< 0.1496	u	< 0.1435	u
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	< 0.2146	u	< 1.1448	u	< 0.1112	u	< 1.0574	u	< 1.1347	u	< 0.1073	u	< 0.1093	u	< 0.1037	u	< 0.0995	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.2249	u	< 1.2001	u	< 0.1165	u	< 1.1084	u	< 1.1894	u	< 0.1125	u	< 0.1146	u	< 0.1087	u	< 0.1043	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	< 0.1577	u	< 0.8413	u	< 0.0817	u	< 0.777	u	< 0.8339	u	< 0.0788	u	< 0.0803	u	< 0.0762	u	< 0.0731	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	< 0.2024	u	< 1.0797	u	< 0.1048	u	< 0.9972	u	< 1.0701	u	< 0.1012	u	< 0.1031	u	< 0.0978	u	< 0.0939	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	< 0.2584	u	< 1.3785	u	< 0.1338	u	< 1.2731	u	< 1.3662	u	< 0.1292	u	< 0.1316	u	< 0.1249	u	< 0.1198	u
Isophorone	5.61E+03	(1)	2.70E+04	(4)	4.22E+00	(8)	< 0.2424	u	< 1.2933	u	< 0.1256	u	< 1.1944	u	< 1.2817	u	< 0.1212	u	< 0.1235	u	< 0.1172	u	< 0.1124	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.2163	u	5.9	v	< 0.1121	u	5.3	v	1.2	J	< 0.1082	u	< 0.1102	u	< 0.1046	u	< 0.1003	u
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	< 0.2341	u	< 1.2489	u	< 0.1213	u	< 1.1534	u	< 1.2378	u	< 0.117	u	< 0.1192	u	< 0.1131	u	< 0.1086	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	< 0.2357	u	< 1.2573	u	< 0.1221	u	< 1.1612	u	< 1.2461	u	< 0.1178	u	< 0.12	u	< 0.1139	u	< 0.1093	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	< 0.2036	u	< 1.086	u	< 0.1054	u	< 1.003	u	< 1.0763	u	< 0.1018	u	< 0.1037	u	< 0.0984	u	< 0.0944	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	< 0.142	u	< 0.7573	u	< 0.0735	u	< 0.6995	u	< 0.7506	u	< 0.071	u	< 0.0723	u	< 0.0686	u	< 0.0658	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	< 0.2379	u	4.1	v	< 0.1232	u	3.6	v	< 1.2577	u	< 0.1189	u	< 0.1212	u	< 0.115	u	< 0.1103	u
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	< 0.2038	u	< 1.0871	u	< 0.1055	u	< 1.004	u	< 1.0774	u	< 0.1019	u	< 0.1038	u	< 0.0985	u	< 0.0945	u
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	< 0.2934	u	< 1.5655	u	< 0.152	u	< 1.4459	u	< 1.5516	u	< 0.1467	u	< 0.1495	u	< 0.1418	u	< 0.1361	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	< 0.191	u	< 1.0193	u	< 0.099	u	< 0.9414	u	< 1.0102	u	< 0.0955	u	< 0.0973	u	< 0.0923	u	< 0.0886	u
Total Petroleum Hydrocarbons (mg/kg)																								
Gasoline Range Organics (GRO)	-		-		-		< 1	u	560	v	< 1	u	40	v	68	v	< 1	u	< 1	u	2.4	J	< 1	u
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-		59	v	**8900**	v	< 5	u	**3800**	v	870	v	< 6.4	u	< 5	u	< 6	u	< 5	u
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-		98	v	**1600**	v	< 50	u	680	v	280	v	< 58	u	< 50	u	< 50	u	< 48	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 20
(9) SoilGW Risk-based EPA DAF = 20
(10) SoilGW MCL-based EPA DAF = 20
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-13 (6-8')		SWMU 10-13 (18-20')		SWMU 10-14 (6-8')		SWMU 10-14 (21-23')		SWMU 10-15 (2-4')		SWMU 10-15 (4-6')		SWMU 10-15 (18-20')		SWMU 10-16 (2-4')		SWMU 10-16 (4-5.5')	
							1505617-004		1505617-005		1505570-001		1505570-002		1505617-006		1505617-007		1505617-008		1505705-001		1505705-002	
							5/13/2015		5/13/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015	
Metals (mg/kg)																								
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	< 3.1409	u	< 2.8483	u	< 3.0545	u	< 7.0836	u	< 1.6215	u	< 1.4891	u	< 2.8183	u	< 1.4809	u	< 1.4396	u
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	1.3	J	1.2	J	0.87	J	1.1	J	1.1	J	1.3	J	2.1	J	1.8	J	1.4	J
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	200	v	110	v	160	v	220	v	52	v	120	v	850	v	500	v	430	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	1.2	v	1.1	v	0.78	v	0.79	v	1	v	1	v	1	v	0.79	v	0.73	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	< 0.0332	u	< 0.0301	u	< 0.0322	u	< 0.0299	u	< 0.0342	u	< 0.0314	u	< 0.0297	u	< 0.0313	u	< 0.0304	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	11	v	15	v	7	v	8.9	v	9.2	v	9.1	v	13	v	9.3	v	8.8	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	9.68E-02	(8)	< 2.3615	u	< 2.1997	u	< 2.2523	u	< 2.2093	u	< 2.3898	u	< 2.3405	u	< 2.1714	u	< 0.7191	u	< 0.7103	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	5.9	v	6.3	v	4.5	v	5	v	4.7	v	4.6	v	7.4	v	4.4	v	4.2	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	< 0.2952	u	< 0.275	u	< 0.2815	u	< 0.2762	u	< 0.2987	u	< 0.2926	u	< 0.2714	u	< 0.0438	u	< 0.0433	u
Iron	5.50E+04	(2)	8.20E+05	(6)	7.00E+03	(9)	18000	v	23000	v	11000	v	15000	v	15000	v	17000	v	20000	v	15000	v	15000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	5.2	v	2.3	v	3.6	v	3.6	v	5.1	v	3.7	v	1.8	v	2.9	v	3	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	5.60E+02	(9)	190	v	430	v	430	v	410	v	490	v	200	v	980	v	460	v	240	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	< 0.0034	u	< 0.0031	u	0.0046	J	0.0032	J	< 0.0033	u	< 0.0032	u	< 0.0031	u	0.0048	J	0.0037	J
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	11	v	15	v	7.1	v	11	v	8.7	v	8.3	v	15	v	7.7	v	7.2	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E+01	(8)	< 1.8287	u	< 1.6583	u	< 1.7784	u	< 1.6497	u	< 1.8882	u	< 1.734	u	< 1.6409	u	< 1.7245	u	< 1.6763	u
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	< 0.0355	u	< 0.0322	u	< 0.0346	u	< 0.0321	u	< 0.0367	u	< 0.0337	u	< 0.0319	u	< 0.0335	u	< 0.0326	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	19	v	15	v	13	v	7.3	v	17	v	15	v	21	v	21	v	22	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	17	v	21	v	14	v	16	v	15	v	15	v	23	v	15	v	14	v
Volatiles (mg/kg)																								
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	< 0.0028	u	< 0.0004	u	< 0.0023	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	< 0.0051	u	< 0.0003	u	< 0.0043	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	< 0.0409	u	< 0.0005	u	< 0.0034	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	< 0.0041	u	< 0.0023	u	< 0.0034	u	< 0.0022	u	< 0.0019	u	< 0.0017	u	< 0.0022	u	< 0.0021	u	< 0.0019	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	< 0.0135	u	< 0.0005	u	< 0.0113	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0005	u	< 0.0004	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	< 0.0023	u	< 0.0004	u	< 0.002	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u
1,1-Dichloropropene	-	-	-	-	-	-	< 0.005	u	< 0.0004	u	< 0.0042	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	< 0.072	u	< 0.0008	u	< 0.006	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0008	u	< 0.0008	u	< 0.0007	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	< 0.0566	u	< 0.0008	u	< 0.0048	u	< 0.0008	u	< 0.0007	u	< 0.0006	u	< 0.0008	u	< 0.0007	u	< 0.0007	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.06224	u	< 0.00084	u	< 0.00522	u	< 0.00082	u	< 0.00071	u	< 0.00064	u	< 0.00083	u	< 0.00077	u	< 0.00071	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	5.2	v	0.0023	v	< 0.0014	u	0.00376	v	< 0.0005	u	< 0.0004	u	0.00497	v	< 0.0005	u	< 0.0005	u
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	< 0.0579	u	< 0.0007	u	< 0.0049	u	< 0.0007	u	< 0.0006	u	< 0.0005	u	< 0.0007	u	< 0.0006	u	< 0.0006	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	< 0.0027	u	< 0.0003	u	< 0.0023	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.02034	u	< 0.0005	u	< 0.0017	u	< 0.00049	u	< 0.00042	u	< 0.00037	u	< 0.00049	u	< 0.00045	u	< 0.00042	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	< 0.0135	u	< 0.0006	u	< 0.0113	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	< 0.0019	u	< 0.0005	u	< 0.0016	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	1.9	v	0.00154	J	< 0.0019	u	0.00233	v	< 0.0003	u	< 0.0003	u	0.00318	v	< 0.0004	u	< 0.0003	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.03972	u	< 0.00038	u	< 0.00333	u	< 0.00037	u	< 0.00032	u	< 0.00028	u	< 0.00037	u	< 0.00035	u	< 0.00032	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	< 0.0046	u	< 0.0004	u	< 0.0039	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.04201	u	< 0.00035	u	< 0.00352	u	< 0.00034	u	< 0.0003	u	< 0.00026	u	< 0.00034	u	< 0.00032	u	< 0.00029	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	11	v	< 0.00088	u	< 0.01699	u	< 0.00086	u	< 0.00075	u	< 0.00067	u	< 0.00087	u	< 0.00081	u	< 0.00075	u
2,2-Dichloropropane	-	-	-	-	-	-	< 0.0049	u	< 0.0004	u	< 0.0041	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	< 0.0217	u	0.00181	J	< 0.0182	u	< 0.0007	u	< 0.0006	u	0.00114	J	0.00227	J	0.00304	J	0.00146	J
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	< 0.0381	u	< 0.0004	u	< 0.0032	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	< 0.0083	u	< 0.0005	u	< 0.007	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	0.000787	J	0.000669	J
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	20	v	< 0.00088	u	< 0.01863	u	< 0.00086	u	< 0.00074	u	< 0.00066	u	< 0.00086	u	< 0.0008	u	< 0.00074	u
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	4.80E+00	(9)	< 0.0255	u	< 0.0004	u	< 0.0021	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
4-Isopropyltoluene	-	-	-	-	-	-	0.37	v	< 0.0009	u	< 0.002	u	< 0.0009	u	< 0.0007	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0007	u
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	< 0.0059	u	< 0.001	u	< 0.0049	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.0009	u	< 0.0008	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	< 0.0252	u	0.00217	J	0.054	J	0.00282	J	0.00666	J	0.0032	J	0.00238	J	0.0254	v	0.00651	J
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	< 0.005	u	0.0194	v	< 0.0042	u	0.0224	v	0.00119	J	0.00144	J	0.0292	v	0.00112	J	0.00221	v
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	< 0.025	u	< 0.0006	u	< 0.0021	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0006	u	< 0.0005	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	< 0.0028	u	< 0.0003	u	< 0.0023	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	< 0.0271	u	< 0.0006	u	< 0.0023	u	< 0.0006	u	< 0.0005	u	< 0.0004	u	< 0.0006	u	< 0.0005	u	< 0.0005	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	0.023	J	< 0.0013	u	0.023	J	< 0.0013	u	< 0.0011	u	< 0.001	u	< 0.0013	u	< 0.0012	u	< 0.0011	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	< 0.0243	u	< 0.001	u	< 0.0204	u	< 0.001	u	0.000968	J	< 0.0008	u	< 0.001	u	< 0.0009	u	< 0.0009	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	< 0.0033	u	< 0.0004	u	< 0.0028	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0003	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	< 0.0026	u	< 0.0002	u	< 0.0022	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	< 0.0261	u	< 0.0023	u	< 0.0219	u	< 0.0022	u	< 0.0019	u	< 0.0017	u	< 0.0022	u	< 0.0021	u	< 0.0019	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	< 0.0035	u	< 0.0005	u	< 0.003	u	< 0.0005	u	< 0.0004	u	< 0.0004	u	< 0.0005	u	< 0.0004	u	< 0.0004	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	< 0.0039	u	< 0.0003	u	< 0.0033	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	< 0.0043	u	< 0.0006	u	< 0.0036	u	< 0.0006	u	< 0.0005	u	< 0.0005	u	< 0.0006	u	< 0.0005	u	< 0.0005	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0023	u	< 0.0023	u	< 0.002	u	< 0.0022	u	< 0.0019	u	< 0.0017	u	< 0.0022	u	< 0.0021	u	< 0.0019	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	< 0.0025	u	< 0.0003	u	< 0.0021	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u	< 0.0002	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-13 (6-8')		SWMU 10-13 (18-20')		SWMU 10-14 (6-8')		SWMU 10-14 (21-23')		SWMU 10-15 (2-4')		SWMU 10-15 (4-6')		SWMU 10-15 (18-20')		SWMU 10-16 (2-4')		SWMU 10-16 (4-5.5')	
							1505617-004		1505617-005		1505570-001		1505570-002		1505617-006		1505617-007		1505617-008		1505705-001		1505705-002	
							5/13/2015		5/13/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015	
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	< 0.0036	u	< 0.0013	u	< 0.003	u	< 0.0013	u	< 0.0011	u	< 0.001	u	< 0.0013	u	< 0.0012	u	< 0.0011	u
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	< 0.0085	u	< 0.0009	u	< 0.0071	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0008	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	1.3	v	0.00216	J	< 0.0026	u	0.00331	v	0.000345	J	0.000367	J	0.00472	v	< 0.0003	u	0.000401	J
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.04684	u	< 0.00045	u	< 0.00393	u	< 0.00044	u	< 0.00038	u	< 0.00034	u	< 0.00044	u	< 0.00041	u	< 0.00038	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	0.67	v	< 0.0005	u	< 0.0024	u	0.000543	J	< 0.0004	u	< 0.0004	u	0.000689	J	< 0.0005	u	< 0.0004	u
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	< 0.0048	u	< 0.0009	u	< 0.004	u	< 0.0009	u	0.00478	v	0.00936	v	< 0.0009	u	< 0.0009	u	< 0.0008	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	< 0.0135	u	0.000655	J	< 0.0113	u	< 0.0005	u	0.000498	J	< 0.0004	u	< 0.0005	u	< 0.0005	u	0.000506	J
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	3.8	v	0.000791	J	< 0.00674	u	0.00101	J	< 0.00062	u	< 0.00055	u	0.00109	J	< 0.00067	u	< 0.00062	u
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	0.58	J	< 0.0009	u	< 0.0024	u	< 0.0009	u	< 0.0008	u	< 0.0007	u	< 0.0009	u	< 0.0008	u	< 0.0008	u
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	0.86	v	< 0.0004	u	< 0.0021	u	0.000587	J	< 0.0004	u	< 0.0003	u	0.000889	J	< 0.0004	u	< 0.0004	u
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	0.36	v	0.000813	J	0.0097	J	0.000853	J	0.000632	J	0.000564	J	0.000889	J	< 0.0005	u	< 0.0005	u
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	< 0.0062	u	< 0.0004	u	< 0.0052	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	< 0.0386	u	< 0.0003	u	< 0.0032	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u	< 0.0003	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	< 0.0029	u	< 0.0004	u	< 0.0025	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	0.11	v	0.00936	v	< 0.0034	u	0.0147	v	0.00109	J	0.0012	J	0.0204	v	0.00104	J	0.00151	J
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	< 0.0022	u	< 0.0004	u	< 0.0018	u	< 0.0004	u	< 0.0003	u	< 0.0003	u	< 0.0004	u	< 0.0003	u	< 0.0003	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0061	u	< 0.0003	u	< 0.0051	u	< 0.0003	u	< 0.0003	u	< 0.0002	u	< 0.0003	u	< 0.0003	u	< 0.0002	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	< 0.0033	u	< 0.0004	u	< 0.0028	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	< 0.0102	u	< 0.0005	u	< 0.0086	u	< 0.0004	u	< 0.0004	u	< 0.0003	u	< 0.0004	u	< 0.0004	u	< 0.0004	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	< 0.0135	u	< 0.0003	u	< 0.0113	u	< 0.0003	u	< 0.0002	u	< 0.0002	u	< 0.0003	u	< 0.0002	u	< 0.0002	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	5	v	0.00769	v	< 0.0079	u	0.0115	v	0.00141	J	0.00123	J	0.0155	v	< 0.0012	u	< 0.0011	u
Semi-volatiles (mg/kg)																								
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.1208	u	< 0.1121	u	< 0.1148	u	< 0.1127	u	< 0.1216	u	< 0.12	u	< 0.1103	u	< 0.1145	u	< 0.1129	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.1128	u	< 0.1048	u	< 0.1072	u	< 0.1053	u	< 0.1136	u	< 0.1121	u	< 0.103	u	< 0.107	u	< 0.1055	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.1048	u	< 0.0973	u	< 0.0996	u	< 0.0978	u	< 0.1055	u	< 0.1041	u	< 0.0957	u	< 0.0994	u	< 0.098	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.1234	u	< 0.1146	u	< 0.1173	u	< 0.1152	u	< 0.1242	u	< 0.1226	u	< 0.1127	u	< 0.117	u	< 0.1154	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	12	v	< 0.1015	u	< 0.1039	u	< 0.1021	u	< 0.1101	u	< 0.1087	u	< 0.0998	u	< 0.1037	u	< 0.1023	u
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	< 0.1375	u	< 0.1277	u	< 0.1306	u	< 0.1283	u	< 0.1384	u	< 0.1366	u	< 0.1255	u	< 0.1304	u	< 0.1286	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	< 0.1364	u	< 0.1267	u	< 0.1296	u	< 0.1273	u	< 0.1373	u	< 0.1355	u	< 0.1245	u	< 0.1293	u	< 0.1275	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	< 0.118	u	< 0.1096	u	< 0.1121	u	< 0.1101	u	< 0.1187	u	< 0.1172	u	< 0.1077	u	< 0.1119	u	< 0.1103	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	< 0.0927	u	< 0.0861	u	< 0.0881	u	< 0.0865	u	< 0.0933	u	< 0.0922	u	< 0.0847	u	< 0.0879	u	< 0.0867	u
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	< 0.049	u	< 0.0455	u	< 0.0466	u	< 0.0458	u	< 0.0493	u	< 0.0487	u	< 0.0448	u	< 0.0465	u	< 0.0458	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	< 0.1055	u	< 0.098	u	< 0.1003	u	< 0.0985	u	< 0.1062	u	< 0.1049	u	< 0.0964	u	< 0.1001	u	< 0.0987	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	< 0.1311	u	< 0.1218	u	< 0.1246	u	< 0.1224	u	< 0.132	u	< 0.1303	u	< 0.1197	u	< 0.1244	u	< 0.1226	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	< 0.1264	u	< 0.1174	u	< 0.1201	u	< 0.118	u	< 0.1272	u	< 0.1256	u	< 0.1154	u	< 0.1199	u	< 0.1182	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	< 0.1101	u	< 0.1022	u	< 0.1046	u	< 0.1028	u	< 0.1108	u	< 0.1094	u	< 0.1005	u	< 0.1044	u	< 0.103	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	21	v	< 0.1003	u	< 0.1026	u	< 0.1008	u	< 0.1087	u	< 0.1073	u	< 0.0986	u	< 0.1024	u	< 0.101	u
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	2.2	v	< 0.1098	u	< 0.1124	u	< 0.1104	u	< 0.119	u	< 0.1175	u	< 0.108	u	< 0.1122	u	< 0.1106	u
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	< 0.1342	u	< 0.1247	u	< 0.1276	u	< 0.1253	u	< 0.1351	u	< 0.1334	u	< 0.1226	u	< 0.1273	u	< 0.1255	u
2-Nitrophenol	-	-	-	-	-	-	< 0.106	u	< 0.0985	u	< 0.1008	u	< 0.099	u	< 0.1067	u	< 0.1054	u	< 0.0968	u	< 0.1006	u	< 0.0992	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	< 0.0908	u	< 0.0844	u	< 0.0863	u	< 0.0848	u	< 0.0914	u	< 0.0903	u	< 0.0829	u	< 0.0862	u	< 0.085	u
3+4-Methylphenol	-	-	-	-	-	-	0.79	v	< 0.1135	u	< 0.1162	u	< 0.1141	u	< 0.1231	u	< 0.1215	u	< 0.1116	u	< 0.116	u	< 0.1143	u
3-Nitroaniline	-	-	-	-	-	-	< 0.1137	u	< 0.1056	u	< 0.108	u	< 0.1061	u	< 0.1144	u	< 0.113	u	< 0.1038	u	< 0.1078	u	< 0.1063	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	< 0.0641	u	< 0.0596	u	< 0.061	u	< 0.0599	u	< 0.0646	u	< 0.0637	u	< 0.0586	u	< 0.0608	u	< 0.06	u
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 0.1252	u	< 0.1162	u	< 0.1189	u	< 0.1168	u	< 0.126	u	< 0.1244	u	< 0.1143	u	< 0.1187	u	< 0.1171	u
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 0.1175	u	< 0.1091	u	< 0.1116	u	< 0.1096	u	< 0.1182	u	< 0.1167	u	< 0.1073	u	< 0.1114	u	< 0.1098	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	< 0.1091	u	< 0.1013	u	< 0.1037	u	< 0.1018	u	< 0.1098	u	< 0.1084	u	< 0.0996	u	< 0.1035	u	< 0.102	u
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 0.1757	u	< 0.1631	u	< 0.1669	u	< 0.164	u	< 0.1768	u	< 0.1746	u	< 0.1604	u	< 0.1666	u	< 0.1643	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	< 0.106	u	< 0.0984	u	< 0.1007	u	< 0.0989	u	< 0.1067	u	< 0.1053	u	< 0.0968	u	< 0.1005	u	< 0.0991	u
4-Nitrophenol	-	-	-	-	-	-	< 0.1016	u	< 0.0944	u	< 0.0966	u	< 0.0949	u	< 0.1023	u	< 0.101	u	< 0.0928	u	< 0.0964	u	< 0.0951	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	< 0.1438	u	< 0.1335	u	< 0.1366	u	< 0.1342	u	< 0.1447	u	< 0.1429	u	< 0.1313	u	< 0.1363	u	< 0.1344	u
Acenaphthylene	-	-	-	-	-	-	< 0.1195	u	< 0.111	u	< 0.1136	u	< 0.1115	u	< 0.1203	u	< 0.1188	u	< 0.1091	u	< 0.1133	u	< 0.1118	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	< 0.1027	u	< 0.0954	u	< 0.0976	u	< 0.0958	u	< 0.1034	u	< 0.102	u	< 0.0938	u	< 0.0974	u	< 0.096	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	< 0.1002	u	< 0.0931	u	< 0.0952	u	< 0.0935	u	< 0.1009	u	< 0.0996	u	< 0.0915	u	< 0.095	u	< 0.0937	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	< 0.1322	u	< 0.1228	u	< 0.1257	u	< 0.1234	u	< 0.1331	u	< 0.1314	u	< 0.1208	u	< 0.1254	u	< 0.1237	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	< 0.0927	u	< 0.0861	u	< 0.0881	u	< 0.0865	u	< 0.0933	u	< 0.0921	u	< 0.0847	u	< 0.0879	u	< 0.0867	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	< 0.1324	u	< 0.1229	u	< 0.1258	u	< 0.1236	u	< 0.1333	u	< 0.1316	u	< 0.1209	u	< 0.1256	u	< 0.1238	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	< 0.112	u	< 0.104	u	< 0.1064	u	< 0.1046	u	< 0.1128	u	< 0.1113	u	< 0.1023	u	< 0.1062	u	< 0.1048	u
Benzo(g,h,i)perylene	-	-	-	-	-	-	< 0.1342	u	< 0.1247	u	< 0.1276	u	< 0.1253	u	< 0.1351	u	< 0.1334	u	< 0.1226	u	< 0.1273	u	< 0.1255	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	< 0.1333	u	< 0.1238	u	< 0.1267	u	< 0.1244	u	< 0.1342	u	< 0.1325	u	< 0.1217	u	< 0.1264	u	< 0.1247	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	< 0.0672	u	< 0.0624	u	< 0.0639	u	< 0.0627	u	< 0.0677	u	< 0.0668	u	< 0.0614	u	< 0.0638	u	< 0.0629	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	< 0.1048	u	< 0.0973	u	< 0.0996	u	< 0.0978	u	< 0.1055	u	< 0.1041	u	< 0.0957	u	< 0.0994	u	< 0.098	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	< 0.1126	u	< 0.1046	u	< 0.107	u	< 0.1051	u	< 0.1133	u	< 0.1119	u	< 0.1028	u	< 0.1068	u	< 0.1053	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	< 0.1166	u	< 0.1082	u	< 0.1108	u	< 0.1088	u	< 0.1173	u	< 0.1158	u	< 0.1064	u	< 0.1105	u	< 0.109	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-13 (6-8')		SWMU 10-13 (18-20')		SWMU 10-14 (6-8')		SWMU 10-14 (21-23')		SWMU 10-15 (2-4')		SWMU 10-15 (4-6')		SWMU 10-15 (18-20')		SWMU 10-16 (2-4')		SWMU 10-16 (4-5.5')	
							1505617-004		1505617-005		1505570-001		1505570-002		1505617-006		1505617-007		1505617-008		1505705-001		1505705-002	
							5/13/2015		5/13/2015		5/12/2015		5/12/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015		5/13/2015	
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	< 0.0901	u	< 0.0837	u	< 0.0856	u	< 0.0841	u	< 0.0907	u	< 0.0896	u	< 0.0823	u	< 0.0855	u	< 0.0843	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	< 0.1325	u	< 0.1231	u	< 0.1259	u	< 0.1237	u	< 0.1334	u	< 0.1317	u	< 0.121	u	< 0.1257	u	< 0.1239	u
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	< 0.144	u	< 0.1337	u	< 0.1369	u	< 0.1344	u	< 0.145	u	< 0.1431	u	< 0.1315	u	< 0.1366	u	< 0.1347	u
Carbazole	-	-	-	-	-	-	< 0.1099	u	< 0.102	u	< 0.1044	u	< 0.1025	u	< 0.1106	u	< 0.1092	u	< 0.1003	u	< 0.1042	u	< 0.1028	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	< 0.1185	u	< 0.11	u	< 0.1126	u	< 0.1106	u	< 0.1192	u	< 0.1177	u	< 0.1082	u	< 0.1123	u	< 0.1108	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	< 0.1278	u	< 0.1187	u	< 0.1214	u	< 0.1193	u	< 0.1286	u	< 0.127	u	< 0.1167	u	< 0.1212	u	< 0.1195	u
Dibenzofuran	-	-	-	-	-	-	< 0.1262	u	< 0.1172	u	< 0.1199	u	< 0.1178	u	< 0.127	u	< 0.1254	u	< 0.1152	u	< 0.1197	u	< 0.118	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	< 0.1339	u	< 0.1243	u	< 0.1272	u	< 0.125	u	< 0.1348	u	< 0.133	u	< 0.1222	u	< 0.127	u	< 0.1252	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	< 0.1086	u	< 0.1008	u	< 0.1032	u	< 0.1013	u	< 0.1093	u	< 0.1079	u	< 0.0991	u	< 0.103	u	< 0.1015	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	< 0.1334	u	< 0.1239	u	< 0.1268	u	< 0.1245	u	< 0.1343	u	< 0.1326	u	< 0.1218	u	< 0.1265	u	< 0.1248	u
Di-n-octyl phthalate	-	-	-	-	-	-	< 0.1313	u	< 0.122	u	< 0.1248	u	< 0.1226	u	< 0.1322	u	< 0.1305	u	< 0.1199	u	< 0.1246	u	< 0.1228	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	< 0.1432	u	< 0.1329	u	< 0.136	u	< 0.1336	u	< 0.1441	u	< 0.1423	u	< 0.1307	u	< 0.1358	u	< 0.1339	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	1.1	v	< 0.1491	u	0.2	J	< 0.1499	u	< 0.1617	u	< 0.1596	u	< 0.1466	u	< 0.1523	u	< 0.1502	u
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	< 0.1113	u	< 0.1034	u	< 0.1058	u	< 0.1039	u	< 0.1121	u	< 0.1106	u	< 0.1017	u	< 0.1056	u	< 0.1041	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.1167	u	< 0.1084	u	< 0.1109	u	< 0.1089	u	< 0.1175	u	< 0.116	u	< 0.1066	u	< 0.1107	u	< 0.1091	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	< 0.0818	u	< 0.076	u	< 0.0778	u	< 0.0764	u	< 0.0824	u	< 0.0813	u	< 0.0747	u	< 0.0776	u	< 0.0765	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	< 0.105	u	< 0.0975	u	< 0.0998	u	< 0.098	u	< 0.1057	u	< 0.1044	u	< 0.0959	u	< 0.0996	u	< 0.0982	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	< 0.1341	u	< 0.1245	u	< 0.1274	u	< 0.1251	u	< 0.1349	u	< 0.1332	u	< 0.1224	u	< 0.1271	u	< 0.1254	u
Isophorone	5.61E+03	(1)	2.70E+04	(4)	4.22E+00	(8)	< 0.1258	u	< 0.1168	u	< 0.1195	u	< 0.1174	u	< 0.1266	u	< 0.125	u	< 0.1148	u	< 0.1193	u	< 0.1176	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	3.9	v	< 0.1042	u	< 0.1067	u	< 0.1048	u	< 0.113	u	< 0.1115	u	< 0.1025	u	< 0.1065	u	< 0.105	u
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	< 0.1215	u	< 0.1128	u	< 0.1154	u	< 0.1134	u	< 0.1223	u	< 0.1207	u	< 0.1109	u	< 0.1152	u	< 0.1136	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	< 0.1223	u	< 0.1136	u	< 0.1162	u	< 0.1141	u	< 0.1231	u	< 0.1215	u	< 0.1117	u	< 0.116	u	< 0.1144	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	< 0.1056	u	< 0.0981	u	< 0.1004	u	< 0.0986	u	< 0.1063	u	< 0.105	u	< 0.0964	u	< 0.1002	u	< 0.0988	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	< 0.0737	u	< 0.0684	u	< 0.07	u	< 0.0687	u	< 0.0741	u	< 0.0732	u	< 0.0673	u	< 0.0699	u	< 0.0689	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	2.3	v	< 0.1146	u	< 0.1173	u	< 0.1152	u	< 0.1242	u	< 0.1226	u	< 0.1127	u	< 0.117	u	< 0.1154	u
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	0.91	v	< 0.0982	u	< 0.1005	u	< 0.0987	u	< 0.1064	u	< 0.1051	u	< 0.0965	u	< 0.1003	u	< 0.0989	u
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	< 0.1523	u	< 0.1414	u	< 0.1447	u	< 0.1421	u	< 0.1533	u	< 0.1513	u	< 0.139	u	< 0.1444	u	< 0.1424	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	< 0.0991	u	< 0.0921	u	< 0.0942	u	< 0.0925	u	< 0.0998	u	< 0.0985	u	< 0.0905	u	< 0.094	u	< 0.0927	u
Total Petroleum Hydrocarbons (mg/kg)																								
Gasoline Range Organics (GRO)	-		-		-		320	v	< 1	u	50	v	< 1	u	< 1	u	< 2.6	u	< 1	u	< 1	u	< 1	u
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-		**2300**	v	< 5	u	**1200**	v	< 6.2	u	< 5	u	< 5	u	< 5	u	< 6	u	< 6	u
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-		< 498	u	< 49	u	< 550	u	< 56	u	< 49	u	< 48	u	< 48	u	< 50	u	< 50	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 20
(9) SoilGW Risk-based EPA DAF = 20
(10) SoilGW MCL-based EPA DAF = 20
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-16 (8-9')		SWMU 10-17 (6-8')	
							1505705-003		1505617-009	
							5/13/2015		5/13/2015	
Metals (mg/kg)										
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	< 1.4877	u	< 3.0564	u
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	1.3	J	1.5	J
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	55	v	200	v
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	0.78	v	1	v
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	< 0.0314	u	< 0.0323	u
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	10	v	11	v
Hexavalent Chromium	3.05E+00	(1)	6.69E+01	(5)	9.68E-02	(8)	< 0.7148	u	< 2.2901	u
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	5.7	v	5.3	v
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	< 0.0436	u	< 0.2863	u
Iron	5.50E+04	(2)	8.20E+05	(6)	7.00E+03	(9)	17000	v	16000	v
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	3.3	v	4.4	v
Manganese	1.80E+03	(2)	2.60E+04	(6)	5.60E+02	(9)	810	v	210	v
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	0.0054	J	< 0.0031	u
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	10	v	9.6	v
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E+01	(8)	< 1.7324	u	< 1.7795	u
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	< 0.0337	u	< 0.0346	u
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	20	v	19	v
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	18	v	17	v
Volatiles (mg/kg)										
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	< 0.0003	u	< 0.052	u
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	< 0.0003	u	< 0.0964	u
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	< 0.0004	u	< 0.0769	u
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	< 0.0018	u	< 0.0763	u
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	< 0.0004	u	< 0.2539	u
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	< 0.0003	u	< 0.0437	u
1,1-Dichloropropene	-	-	-	-	-	-	< 0.0003	u	< 0.0945	u
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	< 0.0007	u	< 0.1355	u
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	< 0.0006	u	< 0.1065	u
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.00067	u	< 0.11712	u
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	0.00269	v	27	v
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	< 0.0005	u	< 0.109	u
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	< 0.0002	u	< 0.0506	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.00039	u	< 0.03828	u
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	< 0.0005	u	< 0.2539	u
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	< 0.0004	u	< 0.0355	u
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	0.0017	J	10	v
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.0003	u	< 0.07473	u
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	< 0.0003	u	< 0.0874	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.00028	u	< 0.07905	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.0007	u	48	v
2,2-Dichloropropane	-	-	-	-	-	-	< 0.0003	u	< 0.0924	u
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	0.00173	J	< 0.4081	u
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	< 0.0004	u	< 0.0717	u
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	< 0.0004	u	< 0.1561	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.0007	u	87	v
4-Chlorotoluene	1.60E+03	(2)	2.30E+04	(6)	4.80E+00	(9)	< 0.0003	u	< 0.048	u
4-Isopropyltoluene	-	-	-	-	-	-	< 0.0007	u	1.6	v
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	< 0.0008	u	< 0.1101	u
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	0.00313	J	< 0.4733	u
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	0.0176	v	1.9	v
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	< 0.0005	u	< 0.0471	u
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	< 0.0002	u	< 0.0519	u
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	< 0.0005	u	< 0.051	u
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	< 0.0011	u	< 0.1225	u
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	< 0.0008	u	< 0.4567	u
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	< 0.0003	u	< 0.0618	u
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	< 0.0002	u	< 0.0489	u
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	< 0.0018	u	< 0.4913	u
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	< 0.0004	u	< 0.0662	u
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	< 0.0002	u	< 0.0735	u
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	< 0.0005	u	< 0.0803	u
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0018	u	< 0.044	u
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	< 0.0002	u	< 0.0476	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-16 (8-9')		SWMU 10-17 (6-8')	
							1505705-003		1505617-009	
							5/13/2015		5/13/2015	
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	< 0.001	u	< 0.0668	u
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	< 0.0007	u	< 0.1596	u
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	0.00347	v	11	v
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.00036	u	< 0.08814	u
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	0.000539	J	3.1	v
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	< 0.0008	u	< 0.0898	u
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	0.000611	J	< 0.2539	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	0.000845	J	20	v
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	< 0.0007	u	2.8	v
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	0.000494	J	5.2	v
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	0.000683	J	1.8	v
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	< 0.0003	u	< 0.1165	u
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	< 0.0003	u	< 0.0727	u
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	< 0.0004	u	< 0.055	u
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	0.0135	v	34	v
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	< 0.0003	u	< 0.0412	u
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	< 0.0002	u	< 0.1143	u
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	< 0.0004	u	< 0.0618	u
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	< 0.0004	u	< 0.1916	u
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	< 0.0002	u	< 0.2539	u
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	0.00946	v	86	v
Semi-volatiles (mg/kg)										
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	< 0.1144	u	< 1.1687	u
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	< 0.1069	u	< 1.0921	u
1,3-Dichlorobenzene	-	-	-	-	-	-	< 0.0992	u	< 1.0141	u
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	< 0.1169	u	< 1.1942	u
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	< 0.1036	u	76	v
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	< 0.1302	u	< 1.3305	u
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	< 0.1292	u	< 1.32	u
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	< 0.1117	u	< 1.1417	u
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	< 0.0878	u	36	v
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	< 0.0464	u	< 0.4744	u
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	< 0.1	u	< 1.0214	u
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	< 0.1242	u	< 1.2691	u
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	< 0.1197	u	< 1.2232	u
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	< 0.1043	u	< 1.0655	u
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	< 0.1023	u	130	v
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	< 0.112	u	56	v
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	< 0.1271	u	< 1.2991	u
2-Nitrophenol	-	-	-	-	-	-	< 0.1004	u	< 1.0262	u
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	< 0.086	u	< 0.8792	u
3+4-Methylphenol	-	-	-	-	-	-	< 0.1158	u	100	v
3-Nitroaniline	-	-	-	-	-	-	< 0.1077	u	< 1.1	u
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	< 0.0608	u	< 0.6208	u
4-Bromophenyl phenyl ether	-	-	-	-	-	-	< 0.1185	u	< 1.2113	u
4-Chloro-3-methylphenol	-	-	-	-	-	-	< 0.1113	u	< 1.1368	u
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	< 0.1033	u	< 1.0559	u
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	< 0.1664	u	< 1.7001	u
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	< 0.1004	u	< 1.0255	u
4-Nitrophenol	-	-	-	-	-	-	< 0.0963	u	< 0.9837	u
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	< 0.1362	u	< 1.3913	u
Acenaphthylene	-	-	-	-	-	-	< 0.1132	u	< 1.1566	u
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	< 0.0973	u	< 0.9938	u
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	< 0.0949	u	< 0.9698	u
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	< 0.1253	u	< 1.2799	u
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	< 0.0878	u	< 0.8973	u
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	< 0.1254	u	< 1.2813	u
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	< 0.1061	u	< 1.0842	u
Benzo(g,h,i)perylene	-	-	-	-	-	-	< 0.1272	u	< 1.2992	u
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	< 0.1263	u	< 1.2902	u
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	< 0.0637	u	< 0.6505	u
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	< 0.0992	u	< 1.0141	u
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	< 0.1066	u	< 1.0897	u
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	< 0.1104	u	< 1.1281	u

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

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (20) (mg/kg) SoilGW	Source	SWMU 10-16 (8-9')		SWMU 10-17 (6-8')	
							1505705-003		1505617-009	
							5/13/2015		5/13/2015	
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	< 0.0854	u	< 0.8722	u
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	< 0.1255	u	< 1.2827	u
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	< 0.1364	u	< 1.3938	u
Carbazole	-	-	-	-	-	-	< 0.1041	u	< 1.0633	u
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	< 0.1122	u	< 1.1464	u
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	< 0.1211	u	< 1.2369	u
Dibenzofuran	-	-	-	-	-	-	< 0.1195	u	< 1.221	u
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	< 0.1268	u	< 1.2957	u
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	< 0.1028	u	< 1.0507	u
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	< 0.1264	u	< 1.2912	u
Di-n-octyl phthalate	-	-	-	-	-	-	< 0.1244	u	< 1.271	u
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	< 0.1356	u	< 1.3854	u
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	< 0.1521	u	7.1	v
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	< 0.1055	u	< 1.0776	u
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	< 0.1105	u	< 1.1295	u
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	< 0.0775	u	< 0.7919	u
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	< 0.0995	u	< 1.0163	u
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	< 0.127	u	< 1.2975	u
Isophorone	5.61E+03	(1)	2.70E+04	(4)	4.22E+00	(8)	< 0.1191	u	< 1.2173	u
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	< 0.1063	u	24	v
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	< 0.115	u	< 1.1755	u
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	< 0.1158	u	< 1.1834	u
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	< 0.1	u	< 1.0222	u
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	< 0.0698	u	< 0.7128	u
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	< 0.1169	u	15	v
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	< 0.1001	u	52	v
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	< 0.1442	u	< 1.4735	u
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	< 0.0939	u	< 0.9594	u
Total Petroleum Hydrocarbons (mg/kg)										
Gasoline Range Organics (GRO)	-		-		-		< 1	u	1300	v
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-		< 6	u	**7800**	v
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-		< 50	u	< 4776	u

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
EPA - Regional Screening Levels (Nov 2015)
(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic
(4) NMED Industrial Occupational Screening Level
(5) NMED Construction Worker Screening Level
(6) EPA Industrial - Screening Levels (June 2015)
(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic
(8) SoilGW NMED Dilution Attenuation Factor (DAF) = 20
(9) SoilGW Risk-based EPA DAF = 20
(10) SoilGW MCL-based EPA DAF = 20
(11) NMED Table 6-2 TPH Soil Screening Levels "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF

* - sample reanalyzed for hexavalent chromium, see amended lab report #1505223
** - sample reanalyzed for hexavalent chromium, see lab report #1505003

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

	Screening Levels	Source	SWMU 10-1-GW		SWMU 10-3-GW		SWMU 10-5-GW		SWMU 10-11-GW		SWMU 10-12-GW		SWMU 10-14-GW		SWMU 10-15-GW		SWMU 10-16-GW	
Lab ID			1505001-001		1505005-001		1505218-001		1505698-001		1505700-001		1505701-001		1505708-001		1505710-001	
Sample Date			4/29/2015		4/29/2015		5/4/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015	
Metals (mg/l) TOTAL																		
Antimony	0.006	(2)	0.0011	v	0.0013	J	0.0008	J	< 0.002	u	< 0.002	u	< 0.002	u	< 0.002	u		
Arsenic	0.01	(2)	0.008	J	< 0.022	u	< 0.015	u	**0.016**	Z	**0.023**	Z	**0.029**	Z	**0.012**	Z		
Barium	2	(2)	0.74	v	0.28	v	0.57	v	**5.3**	Z	**7.3**	Z	**7**	Z	0.37	v		
Beryllium	0.004	(2)	0.0024	v	0.00091	J	0.0011	J	**0.017**	Z	**0.037**	Z	**0.035**	Z	0.0015	J		
Cadmium	0.005	(2)	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.005	u	< 0.005	u	< 0.001	u		
Chromium	0.05	(3)	0.013	v	< 0.002	u	0.0051	J	**0.073**	v	**0.17**	Z	**0.15**	Z	0.0062	v		
Hexavalent Chromium	0.000252	(4)	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u		
Cobalt	0.006	(1)	**0.012**	v	0.0059	J	0.0056	J	**0.077**	v	**0.14**	v	**0.13**	v	**0.025**	v		
Cyanide	0.2	(3)	0.046	v	0.14	v	0.013	v	< 0.005	u	< 0.005	u	< 0.005	u	0.055	v		
Iron	13.800	(4)	**16**	Z	2.6	Z	5.7	Z	**86**	Z	**140**	Z	**130**	Z	9.4	Z		
Lead	0.015	(2)	**0.017**	Z	0.0024	J	0.0064	v	**0.18**	Z	**0.28**	Z	**0.24**	Z	0.014	v		
Manganese	2.020	(4)	1.2	Z	0.52	Z	0.69	Z	**13**	Z	**18**	Z	**22**	Z	**2.9**	Z		
Mercury	0.002	(3)	<0.000059	u	<0.000059	u	<0.000059	u	0.00075	v	0.00039	v	0.00021	v	<0.000059	u		
Nickel	0.372	(4)	0.19	Z	0.0067	J	0.0044	J	0.13	Z	0.26	Z	0.25	Z	**0.64**	Z		
Selenium	0.05	(3)	0.021	J	0.036	J	0.036	J	0.0099	J	0.008	J	0.01	J	0.019	v		
Silver	0.05	(3)	< 0.002	u	< 0.002	u	< 0.002	u	< 0.002	u	< 0.011	u	< 0.011	u	< 0.002	u		
Vanadium	0.0631	(4)	0.028	J	0.01	J	0.013	J	**0.12**	v	**0.17**	J	**0.16**	J	0.019	J		
Zinc	10	(3)	0.071	v	0.023	v	0.034	v	0.19	v	0.45	v	0.36	v	0.046	v		
Chloride	250	(3)	**3600**	v	**7100**	v	**2800**	v	**2000**	v	**330**	v	**370**	v	**2300**	v		
Fluoride	1.6	(3)	< 0.58	u	< 0.29	u	< 0.029	u	< 0.145	u	1.2	v	1.3	v	0.55	v		
Sulfate	600	(3)	340	v	**1100**	v	310	v	380	v	370	v	370	v	440	v		
Metals (mg/l) DISSOLVED																		
Antimony (D)	0.006	(2)	0.00093	J	0.00074	J	< 0.001	u	< 0.001	u	0.00023	J	<0.00014	u	< 0.001	u		
Arsenic (D)	0.01	(2)	0.01	J	**0.011**	J	**0.012**	J	0.0039	J	0.0025	v	0.003	v	**0.011**	J		
Barium (D)	1	(3)	0.45	v	0.23	v	0.32	v	0.24	v	0.085	v	0.18	v	0.22	v		
Beryllium (D)	0.004	(2)	0.00052	J	0.0004	J	0.00042	J	<0.00031	u	<0.00031	u	0.0009	J	<0.00031	u		
Cadmium (D)	0.005	(2)	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u		
Chromium (D)	0.05	(3)	0.0045	J	0.0056	J	0.0039	J	0.0054	J	0.008	v	0.0075	v	0.0094	v		
Cobalt (D)	0.05	(3)	0.0084	v	0.0081	v	0.0035	J	0.01	v	0.0044	J	0.0051	J	0.023	v		
Iron (D)	1	(3)	0.58	Z	0.068	v	0.011	J	0.78	Z	**2.6**	Z	**3.9**	Z	0.61	Z		
Lead (D)	0.015	(2)	0.001	J	<0.00013	u	<0.00013	u	0.00074	J	0.0014	v	0.0068	v	0.0026	J		
Manganese (D)	0.2	(3)	**0.93**	Z	**0.45**	Z	**0.27**	Z	**3.9**	Z	**0.91**	Z	**1.1**	Z	**2.4**	Z		
Nickel (D)	0.372	(4)	0.21	Z	0.0053	J	0.0028	J	0.024	v	0.012	v	0.011	v	**0.65**	Z		

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

	Screening Levels	Source	SWMU 10-1-GW		SWMU 10-3-GW		SWMU 10-5-GW		SWMU 10-11-GW		SWMU 10-12-GW		SWMU 10-14-GW		SWMU 10-15-GW		SWMU 10-16-GW	
Lab ID			1505001-001		1505005-001		1505218-001		1505698-001		1505700-001		1505701-001		1505708-001		1505710-001	
Sample Date			4/29/2015		4/29/2015		5/4/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015	
Selenium (D)	0.05	(3)	0.03	v	0.041	J	0.036	J	0.0076	J	0.003	v	0.0031	v	0.02	v		
Silver (D)	0.05	(3)	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u	< 0.001	u		
Vanadium (D)	0.0631	(4)	0.0045	J	0.0048	J	0.002	J	0.0052	J	0.011	J	0.016	J	0.0057	J		
Zinc (D)	10	(3)	0.029	v	0.033	v	0.038	v	0.049	v	0.062	v	0.014	v	0.15	v		
Volatiles (ug/l)																		
1,1,1,2-Tetrachloroethane	5.72	(4)	< 0.11	u	< 0.11	u	< 0.11	u	< 0.221	u	< 0.221	u	< 0.221	u	< 0.221	u	< 0.11	u
1,1,1-Trichloroethane	60	(3)	< 0.078	u	< 0.078	u	< 0.078	u	< 0.155	u	< 0.155	u	< 0.155	u	< 0.155	u	< 0.078	u
1,1,2,2-Tetrachloroethane	10	(3)	< 0.18	u	< 0.18	u	< 0.18	u	< 0.359	u	< 0.359	u	< 0.359	u	< 0.359	u	< 0.18	u
1,1,2-Trichloroethane	5	(2)	< 0.079	u	< 0.079	u	< 0.079	u	< 0.158	u	< 0.158	u	< 0.158	u	< 0.158	u	< 0.079	u
1,1-Dichloroethane	25	(3)	< 0.4	u	< 0.4	u	< 0.4	u	0.93	J	< 0.8	u	< 0.8	u	< 0.8	u	3.1	v
1,1-Dichloroethene	5	(3)	< 0.099	u	< 0.099	u	0.12	J	< 0.199	u	< 0.199	u	< 0.199	u	< 0.199	u	0.73	J
1,1-Dichloropropene	-		< 0.115	u	< 0.115	u	< 0.115	u	< 0.23	u	< 0.23	u	< 0.23	u	< 0.23	u	< 0.115	u
1,2,3-Trichlorobenzene	-		< 0.266	u	< 0.266	u	< 0.266	u	< 0.533	u	< 0.533	u	< 0.533	u	< 0.533	u	< 0.266	u
1,2,3-Trichloropropane	0.00747	(4)	< 0.158	u	< 0.158	u	< 0.158	u	< 0.317	u	< 0.317	u	< 0.317	u	< 0.317	u	< 0.158	u
1,2,4-Trichlorobenzene	70	(2)	< 0.283	u	< 0.283	u	< 0.283	u	< 0.565	u	< 0.565	u	< 0.565	u	< 0.565	u	< 0.283	u
1,2,4-Trimethylbenzene	15	(1)	< 0.159	u	< 0.159	u	3.7	v	**64**	v	0.66	J	0.44	J	< 0.319	u	0.18	J
1,2-Dibromo-3-chloropropane	0.2	(2)	< 0.136	u	< 0.136	u	< 0.136	u	< 0.272	u	< 0.272	u	< 0.272	u	< 0.272	u	< 0.136	u
1,2-Dibromoethane (EDB)	0.05	(2)	< 0.134	u	< 0.134	u	< 0.134	u	< 0.267	u	< 0.267	u	< 0.267	u	< 0.267	u	< 0.134	u
1,2-Dichlorobenzene	600	(2)	< 0.118	u	< 0.118	u	< 0.118	u	< 0.237	u	< 0.237	u	< 0.237	u	< 0.237	u	< 0.118	u
1,2-Dichloroethane (EDC)	5	(2)	< 0.176	u	0.48	J	0.32	J	< 0.353	u	< 0.353	u	< 0.353	u	< 0.353	u	0.47	J
1,2-Dichloropropane	5	(2)	< 0.151	u	< 0.151	u	< 0.151	u	< 0.302	u	< 0.302	u	< 0.302	u	< 0.302	u	< 0.151	u
1,3,5-Trimethylbenzene	12	(1)	< 0.123	u	< 0.123	u	3.9	v	**22**	v	< 0.246	u	< 0.246	u	< 0.246	u	< 0.123	u
1,3-Dichlorobenzene	-		< 0.093	u	< 0.093	u	< 0.093	u	< 0.187	u	< 0.187	u	< 0.187	u	< 0.187	u	< 0.093	u
1,3-Dichloropropane	370	(1)	< 0.172	u	< 0.172	u	< 0.172	u	< 0.344	u	< 0.344	u	< 0.344	u	< 0.344	u	< 0.172	u
1,4-Dichlorobenzene	75	(2)	< 0.166	u	< 0.166	u	< 0.166	u	< 0.332	u	< 0.332	u	< 0.332	u	< 0.332	u	< 0.166	u
1-Methylnaphthalene	11	(5)	< 0.538	u	< 0.538	u	3.1	J	**70**	v	< 1.077	u	< 1.077	u	< 1.077	u	< 0.538	u
2,2-Dichloropropane	-		< 0.152	u	< 0.152	u	< 0.152	u	< 0.303	u	< 0.303	u	< 0.303	u	< 0.303	u	< 0.152	u
2-Butanone	5560	(4)	< 0.363	u	1.4	J	< 0.363	u	< 0.725	u	< 0.725	u	< 0.725	u	2.9	J	< 0.363	u
2-Chlorotoluene	240	(1)	< 0.079	u	< 0.079	u	< 0.079	u	< 0.158	u	< 0.158	u	< 0.158	u	< 0.158	u	< 0.079	u
2-Hexanone	-		< 0.477	u	< 0.477	u	< 0.477	u	< 0.953	u	< 0.953	u	< 0.953	u	< 0.953	u	< 0.477	u
2-Methylnaphthalene	36	(1)	< 0.594	u	< 0.594	u	3.8	J	**98**	v	1.5	J	< 1.189	u	< 1.189	u	< 0.594	u
4-Chlorotoluene	250	(1)	< 0.149	u	< 0.149	u	< 0.149	u	< 0.299	u	< 0.299	u	< 0.299	u	< 0.299	u	< 0.149	u
4-Isopropyltoluene	-		< 0.189	u	< 0.189	u	0.92	J	2.7	v	< 0.377	u	< 0.377	u	< 0.377	u	< 0.189	u
4-Methyl-2-pentanone	-		< 0.257	u	< 0.257	u	0.61	J	< 0.513	u	< 0.513	u	< 0.513	u	< 0.513	u	< 0.257	u

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

	Screening Levels	Source	SWMU 10-1-GW		SWMU 10-3-GW		SWMU 10-5-GW		SWMU 10-11-GW		SWMU 10-12-GW		SWMU 10-14-GW		SWMU 10-15-GW		SWMU 10-16-GW	
Lab ID			1505001-001		1505005-001		1505218-001		1505698-001		1505700-001		1505701-001		1505708-001		1505710-001	
Sample Date			4/29/2015		4/29/2015		5/4/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015	
Acetone	14100	(4)	< 0.936	u	< 0.936	u	< 0.936	u	8.8	J	3.4	J	2.7	J	9.7	J	1.6	J
Benzene	5	(2)	4.7	v	2.9	v	**27**	v	2.5	v	0.47	J	0.47	J	0.51	J	0.24	J
Bromobenzene	62	(1)	< 0.108	u	< 0.108	u	< 0.108	u	< 0.216	u	< 0.216	u	< 0.216	u	< 0.216	u	< 0.108	u
Bromodichloromethane	1.34	(4)	< 0.09	u	< 0.09	u	< 0.09	u	< 0.179	u	< 0.179	u	< 0.179	u	< 0.179	u	< 0.09	u
Bromoform	33	(5)	< 0.162	u	< 0.162	u	< 0.162	u	< 0.325	u	< 0.325	u	< 0.325	u	< 0.325	u	< 0.162	u
Bromomethane	7.54	(4)	< 1.161	u	< 1.161	u	< 1.161	u	< 2.322	u	< 2.322	u	< 2.322	u	< 2.322	u	< 1.161	u
Carbon disulfide	810	(4)	< 0.673	u	< 0.673	u	< 0.673	u	< 1.346	u	< 1.346	u	< 1.346	u	< 1.346	u	< 0.673	u
Carbon Tetrachloride	5	(2)	< 0.078	u	< 0.078	u	< 0.078	u	< 0.156	u	< 0.156	u	< 0.156	u	< 0.156	u	< 0.078	u
Chlorobenzene	100	(2)	< 0.093	u	< 0.093	u	< 0.093	u	< 0.187	u	< 0.187	u	< 0.187	u	< 0.187	u	< 0.093	u
Chloroethane	20900	(4)	< 0.105	u	< 0.105	u	< 0.105	u	< 0.209	u	< 0.209	u	< 0.209	u	< 0.209	u	< 0.105	u
Chloroform	100	(3)	< 0.215	u	< 0.215	u	< 0.215	u	< 0.43	u	< 0.43	u	< 0.43	u	< 0.43	u	< 0.215	u
Chloromethane	20.3	(4)	< 0.174	u	< 0.174	u	< 0.174	u	< 0.347	u	< 0.347	u	< 0.347	u	< 0.347	u	< 0.174	u
cis-1,2-DCE	70	(2)	< 0.081	u	< 0.081	u	< 0.081	u	< 0.161	u	< 0.161	u	< 0.161	u	< 0.161	u	0.39	J
cis-1,3-Dichloropropene	4.7	(4)	< 0.133	u	< 0.133	u	< 0.133	u	< 0.266	u	< 0.266	u	< 0.266	u	< 0.266	u	< 0.133	u
Dibromochloromethane	1.68	(4)	< 0.097	u	< 0.097	u	< 0.097	u	< 0.194	u	< 0.194	u	< 0.194	u	< 0.194	u	< 0.097	u
Dibromomethane	8.3	(1)	< 0.234	u	< 0.234	u	< 0.234	u	< 0.469	u	< 0.469	u	< 0.469	u	< 0.469	u	< 0.234	u
Dichlorodifluoromethane	197	(4)	< 0.692	u	< 0.692	u	< 0.692	u	< 1.385	u	< 1.385	u	< 1.385	u	< 1.385	u	< 0.692	u
Ethylbenzene	700	(2)	< 0.101	u	< 0.101	u	1.6	v	40	v	< 0.202	u	< 0.202	u	< 0.202	u	< 0.101	u
Hexachlorobutadiene	2.95	(4)	< 0.251	u	< 0.251	u	< 0.251	u	< 0.503	u	< 0.503	u	< 0.503	u	< 0.503	u	< 0.251	u
Isopropylbenzene	447	(4)	< 0.152	u	< 0.152	u	1.2	v	8.5	v	< 0.304	u	< 0.304	u	< 0.304	u	< 0.152	u
Methyl tert-butyl ether (MTBE)	143	(4)	6.1	v	5.5	v	< 0.174	u	14	v	13	v	16	v	**150**	v	19	v
Methylene Chloride	5	(2)	< 0.36	u	< 0.36	u	< 0.36	u	< 0.721	u	< 0.721	u	< 0.721	u	< 0.721	u	< 0.36	u
Naphthalene	1.65	(4)	< 0.218	u	< 0.218	u	< 0.218	u	**45**	v	0.52	J	< 0.436	u	< 0.436	u	< 0.218	u
n-Butylbenzene	-		< 0.245	u	< 0.245	u	0.4	J	3.4	J	< 0.491	u	< 0.491	u	< 0.491	u	< 0.245	u
n-Propylbenzene	-		< 0.163	u	0.31	J	0.64	J	11	v	< 0.326	u	< 0.326	u	< 0.326	u	< 0.163	u
sec-Butylbenzene	-		< 0.229	u	< 0.229	u	0.6	J	2.2	v	< 0.457	u	< 0.457	u	< 0.457	u	< 0.229	u
Styrene	100	(2)	< 0.106	u	< 0.106	u	< 0.106	u	< 0.211	u	< 0.211	u	< 0.211	u	< 0.211	u	< 0.106	u
tert-Butylbenzene	-		< 0.129	u	< 0.129	u	< 0.129	u	< 0.259	u	< 0.259	u	< 0.259	u	< 0.259	u	< 0.129	u
Tetrachloroethene (PCE)	5	(2)	< 0.16	u	< 0.16	u	< 0.16	u	< 0.321	u	< 0.321	u	< 0.321	u	< 0.321	u	< 0.16	u
Toluene	750	(3)	< 0.108	u	< 0.108	u	2.7	v	6	v	< 0.217	u	0.3	J	< 0.217	u	< 0.108	u
trans-1,2-DCE	100	(2)	< 0.094	u	< 0.094	u	< 0.094	u	< 0.188	u	< 0.188	u	< 0.188	u	< 0.188	u	< 0.094	u
trans-1,3-Dichloropropene	4.7	(4)	< 0.113	u	< 0.113	u	< 0.113	u	< 0.226	u	< 0.226	u	< 0.226	u	< 0.226	u	< 0.113	u
Trichloroethene (TCE)	5	(2)	< 0.163	u	< 0.163	u	< 0.163	u	< 0.327	u	< 0.327	u	< 0.327	u	< 0.327	u	0.77	J
Trichlorofluoromethane	1140	(4)	< 0.127	u	< 0.127	u	< 0.127	u	< 0.254	u	< 0.254	u	< 0.254	u	< 0.254	u	< 0.127	u

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

	Screening Levels	Source	SWMU 10-1-GW		SWMU 10-3-GW		SWMU 10-5-GW		SWMU 10-11-GW		SWMU 10-12-GW		SWMU 10-14-GW		SWMU 10-15-GW		SWMU 10-16-GW	
Lab ID			1505001-001		1505005-001		1505218-001		1505698-001		1505700-001		1505701-001		1505708-001		1505710-001	
Sample Date			4/29/2015		4/29/2015		5/4/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015	
Vinyl chloride	1	(3)	< 0.125	u	< 0.125	u	< 0.125	u	< 0.251	u	< 0.251	u	< 0.251	u	< 0.251	u	0.47	J
Xylenes, Total	620	(3)	< 0.282	u	< 0.282	u	13	v	230	v	< 0.565	u	< 0.565	u	< 0.565	u	0.35	J
Semivolatiles (ug/l)																		
1,2,4-Trichlorobenzene	70	(2)	< 1.993	u	< 1.993	u	< 1.993	u	< 3.987	u	< 3.987	u	< 3.987	u	< 1.993	u	< 1.993	u
1,2-Dichlorobenzene	600	(2)	< 1.899	u	< 1.899	u	< 1.899	u	< 3.798	u	< 3.798	u	< 3.798	u	< 1.899	u	< 1.899	u
1,3-Dichlorobenzene	-		< 1.69	u	< 1.69	u	< 1.69	u	< 3.381	u	< 3.381	u	< 3.381	u	< 1.69	u	< 1.69	u
1,4-Dichlorobenzene	75	(2)	< 1.234	u	< 1.234	u	< 1.234	u	< 2.468	u	< 2.468	u	< 2.468	u	< 1.234	u	< 1.234	u
1-Methylnaphthalene	11	(5)	< 1.801	u	< 1.801	u	< 1.801	u	**20**	J	< 3.603	u	< 3.603	u	< 1.801	u	< 1.801	u
2,4,5-Trichlorophenol	1170	(4)	< 1.617	u	< 1.617	u	< 1.617	u	< 3.233	u	< 3.233	u	< 3.233	u	< 1.617	u	< 1.617	u
2,4,6-Trichlorophenol	11.9	(4)	< 1.258	u	< 1.258	u	< 1.258	u	< 2.517	u	< 2.517	u	< 2.517	u	< 1.258	u	< 1.258	u
2,4-Dichlorophenol	45.3	(4)	< 1.395	u	< 1.395	u	< 1.395	u	< 2.79	u	< 2.79	u	< 2.79	u	< 1.395	u	< 1.395	u
2,4-Dimethylphenol	354	(4)	< 1.854	u	< 1.854	u	< 1.854	u	< 3.708	u	< 3.708	u	< 3.708	u	< 1.854	u	< 1.854	u
2,4-Dinitrophenol	38.8	(4)	< 1.07	u	< 1.07	u	< 1.07	u	< 2.139	u	< 2.139	u	< 2.139	u	< 1.07	u	< 1.07	u
2,4-Dinitrotoluene	2.37	(4)	< 1.434	u	< 1.434	u	< 1.434	u	< 2.868	u	< 2.868	u	< 2.868	u	< 1.434	u	< 1.434	u
2,6-Dinitrotoluene	0.484	(4)	< 1.49	u	< 1.49	u	< 1.49	u	< 2.981	u	< 2.981	u	< 2.981	u	< 1.49	u	< 1.49	u
2-Chloronaphthalene	733	(4)	< 1.716	u	< 1.716	u	< 1.716	u	< 3.431	u	< 3.431	u	< 3.431	u	< 1.716	u	< 1.716	u
2-Chlorophenol	91	(4)	< 1.204	u	< 1.204	u	< 1.204	u	< 2.408	u	< 2.408	u	< 2.408	u	< 1.204	u	< 1.204	u
2-Methylnaphthalene	36	(1)	< 2.246	u	< 2.246	u	< 2.246	u	16	J	< 4.492	u	< 4.492	u	< 2.246	u	< 2.246	u
2-Methylphenol	930	(1)	< 1.246	u	< 1.246	u	< 1.246	u	< 2.491	u	< 2.491	u	< 2.491	u	< 1.246	u	< 1.246	u
2-Nitroaniline	190	(1)	< 1.795	u	< 1.795	u	< 1.795	u	< 3.589	u	< 3.589	u	< 3.589	u	< 1.795	u	< 1.795	u
2-Nitrophenol	-		< 1.231	u	< 1.231	u	< 1.231	u	< 2.463	u	< 2.463	u	< 2.463	u	< 1.231	u	< 1.231	u
3,3´-Dichlorobenzidine	1.24	(4)	< 2.608	u	< 2.608	u	< 2.608	u	< 5.217	u	< 5.217	u	< 5.217	u	< 2.608	u	< 2.608	u
3+4-Methylphenol	930	(1)	< 1.475	u	< 1.475	u	< 1.475	u	< 2.951	u	< 2.951	u	< 2.951	u	< 1.475	u	< 1.475	u
3-Nitroaniline	-		< 1.48	u	< 1.48	u	< 1.48	u	< 2.96	u	< 2.96	u	< 2.96	u	< 1.48	u	< 1.48	u
4,6-Dinitro-2-methylphenol	1.51	(4)	< 1.368	u	< 1.368	u	< 1.368	u	< 2.736	u	< 2.736	u	< 2.736	u	< 1.368	u	< 1.368	u
4-Bromophenyl phenyl ether	-		< 1.409	u	< 1.409	u	< 1.409	u	< 2.817	u	< 2.817	u	< 2.817	u	< 1.409	u	< 1.409	u
4-Chloro-3-methylphenol	-		< 1.351	u	< 1.351	u	< 1.351	u	< 2.701	u	< 2.701	u	< 2.701	u	< 1.351	u	< 1.351	u
4-Chloroaniline	3.7	(5)	< 1.874	u	< 1.874	u	< 1.874	u	< 3.748	u	< 3.748	u	< 3.748	u	< 1.874	u	< 1.874	u
4-Chlorophenyl phenyl ether	-		< 2.013	u	< 2.013	u	< 2.013	u	< 4.026	u	< 4.026	u	< 4.026	u	< 2.013	u	< 2.013	u
4-Nitroaniline	38	(5)	< 1.242	u	< 1.242	u	< 1.242	u	< 2.483	u	< 2.483	u	< 2.483	u	< 1.242	u	< 1.242	u
4-Nitrophenol	-		< 1.405	u	< 1.405	u	< 1.405	u	< 2.81	u	< 2.81	u	< 2.81	u	< 1.405	u	< 1.405	u
Acenaphthene	535	(4)	< 1.885	u	< 1.885	u	< 1.885	u	< 3.769	u	< 3.769	u	< 3.769	u	< 1.885	u	< 1.885	u
Acenaphthylene	-		< 1.866	u	< 1.866	u	< 1.866	u	< 3.732	u	< 3.732	u	< 3.732	u	< 1.866	u	< 1.866	u
Aniline	130	(5)	< 1.546	u	< 1.546	u	< 1.546	u	< 3.092	u	< 3.092	u	< 3.092	u	< 1.546	u	< 1.546	u

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

	Screening Levels	Source	SWMU 10-1-GW		SWMU 10-3-GW		SWMU 10-5-GW		SWMU 10-11-GW		SWMU 10-12-GW		SWMU 10-14-GW		SWMU 10-15-GW		SWMU 10-16-GW	
Lab ID			1505001-001		1505005-001		1505218-001		1505698-001		1505700-001		1505701-001		1505708-001		1505710-001	
Sample Date			4/29/2015		4/29/2015		5/4/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015	
Anthracene	1720	(4)	< 1.605	u	< 1.605	u	< 1.605	u	< 3.21	u	< 3.21	u	< 3.21	u	< 1.605	u	< 1.605	u
Azobenzene	1.2	(5)	< 2.005	u	< 2.005	u	< 2.005	u	< 4.011	u	< 4.011	u	< 4.011	u	< 2.005	u	< 2.005	u
Benz(a)anthracene	0.343	(4)	< 2.506	u	< 2.506	u	< 2.506	u	< 5.013	u	< 5.013	u	< 5.013	u	< 2.506	u	< 2.506	u
Benzo(a)pyrene	0.2	(2)	< 2.724	u	< 2.724	u	< 2.724	u	< 5.448	u	< 5.448	u	< 5.448	u	< 2.724	u	< 2.724	u
Benzo(b)fluoranthene	0.343	(4)	< 2.403	u	< 2.403	u	< 2.403	u	< 4.806	u	< 4.806	u	< 4.806	u	< 2.403	u	< 2.403	u
Benzo(g,h,i)perylene	-		< 3.125	u	< 3.125	u	< 3.125	u	< 6.25	u	< 6.25	u	< 6.25	u	< 3.125	u	< 3.125	u
Benzo(k)fluoranthene	3.43	(4)	< 2.515	u	< 2.515	u	< 2.515	u	< 5.03	u	< 5.03	u	< 5.03	u	< 2.515	u	< 2.515	u
Benzoic acid	75000	(1)	< 1.026	u	< 1.026	u	< 1.026	u	< 2.051	u	< 2.051	u	< 2.051	u	< 1.026	u	7.1	J
Benzyl alcohol	2000	(1)	< 1.172	u	< 1.172	u	< 1.172	u	< 2.344	u	< 2.344	u	< 2.344	u	< 1.172	u	< 1.172	u
Bis(2-chloroethoxy)methane	59	(1)	< 1.805	u	< 1.805	u	< 1.805	u	< 3.61	u	< 3.61	u	< 3.61	u	< 1.805	u	< 1.805	u
Bis(2-chloroethyl)ether	9.76	(4)	< 1.774	u	< 1.774	u	< 1.774	u	< 3.547	u	< 3.547	u	< 3.547	u	< 1.774	u	< 1.774	u
Bis(2-chloroisopropyl)ether	9.76	(4)	< 2.059	u	< 2.059	u	< 2.059	u	< 4.119	u	< 4.119	u	< 4.119	u	< 2.059	u	< 2.059	u
Bis(2-ethylhexyl)phthalate	6	(2)	< 3.326	u	< 3.326	u	< 3.326	u	< 6.651	u	< 6.651	u	< 6.651	u	< 3.326	u	< 3.326	u
Butyl benzyl phthalate	160	(5)	< 2.37	u	< 2.37	u	< 2.37	u	< 4.74	u	< 4.74	u	< 4.74	u	< 2.37	u	< 2.37	u
Carbazole	-		< 1.49	u	< 1.49	u	< 1.49	u	< 2.98	u	< 2.98	u	< 2.98	u	< 1.49	u	< 1.49	u
Chrysene	34.3	(4)	< 2.154	u	< 2.154	u	< 2.154	u	< 4.309	u	< 4.309	u	< 4.309	u	< 2.154	u	< 2.154	u
Dibenz(a,h)anthracene	0.106	(4)	< 3.268	u	< 3.268	u	< 3.268	u	< 6.537	u	< 6.537	u	< 6.537	u	< 3.268	u	< 3.268	u
Dibenzofuran	-		< 1.902	u	< 1.902	u	< 1.902	u	< 3.804	u	< 3.804	u	< 3.804	u	< 1.902	u	< 1.902	u
Diethyl phthalate	14800	(4)	< 1.673	u	< 1.673	u	< 1.673	u	< 3.347	u	< 3.347	u	< 3.347	u	< 1.673	u	< 1.673	u
Dimethyl phthalate	-		< 1.995	u	< 1.995	u	< 1.995	u	< 3.99	u	< 3.99	u	< 3.99	u	< 1.995	u	< 1.995	u
Di-n-butyl phthalate	885	(4)	< 2.103	u	< 2.103	u	< 2.103	u	< 4.206	u	< 4.206	u	< 4.206	u	< 2.103	u	< 2.103	u
Di-n-octyl phthalate	-		< 1.939	u	< 1.939	u	< 1.939	u	< 3.879	u	< 3.879	u	< 3.879	u	< 1.939	u	< 1.939	u
Fluoranthene	802	(4)	< 1.476	u	< 1.476	u	< 1.476	u	< 2.951	u	< 2.951	u	< 2.951	u	< 1.476	u	< 1.476	u
Fluorene	288	(4)	< 1.672	u	< 1.672	u	< 1.672	u	< 3.344	u	< 3.344	u	< 3.344	u	< 1.672	u	< 1.672	u
Hexachlorobenzene	1	(2)	< 2.022	u	< 2.022	u	< 2.022	u	< 4.045	u	< 4.045	u	< 4.045	u	< 2.022	u	< 2.022	u
Hexachlorobutadiene	2.95	(4)	< 1.949	u	< 1.949	u	< 1.949	u	< 3.898	u	< 3.898	u	< 3.898	u	< 1.949	u	< 1.949	u
Hexachlorocyclopentadiene	50	(2)	< 1.471	u	< 1.471	u	< 1.471	u	< 2.942	u	< 2.942	u	< 2.942	u	< 1.471	u	< 1.471	u
Hexachloroethane	6.8	(4)	< 1.612	u	< 1.612	u	< 1.612	u	< 3.224	u	< 3.224	u	< 3.224	u	< 1.612	u	< 1.612	u
Indeno(1,2,3-cd)pyrene	0.343	(4)	< 2.46	u	< 2.46	u	< 2.46	u	< 4.919	u	< 4.919	u	< 4.919	u	< 2.46	u	< 2.46	u
Isophorone	779	(4)	< 1.952	u	< 1.952	u	< 1.952	u	< 3.905	u	< 3.905	u	< 3.905	u	< 1.952	u	< 1.952	u
Naphthalene	1.65	(4)	< 1.834	u	< 1.834	u	< 1.834	u	**4.4**	J	< 3.667	u	< 3.667	u	< 1.834	u	< 1.834	u
Nitrobenzene	1.4	(4)	< 1.494	u	< 1.494	u	< 1.494	u	< 2.988	u	< 2.988	u	< 2.988	u	< 1.494	u	< 1.494	u
N-Nitrosodimethylamine	0.00165	(4)	< 1.417	u	< 1.417	u	< 1.417	u	< 2.834	u	< 2.834	u	< 2.834	u	< 1.417	u	< 1.417	u
N-Nitrosodi-n-propylamine	0.11	(5)	< 2.036	u	< 2.036	u	< 2.036	u	< 4.073	u	< 4.073	u	< 4.073	u	< 2.036	u	< 2.036	u

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

	Screening Levels	Source	SWMU 10-1-GW		SWMU 10-3-GW		SWMU 10-5-GW		SWMU 10-11-GW		SWMU 10-12-GW		SWMU 10-14-GW		SWMU 10-15-GW		SWMU 10-16-GW	
Lab ID			1505001-001		1505005-001		1505218-001		1505698-001		1505700-001		1505701-001		1505708-001		1505710-001	
Sample Date			4/29/2015		4/29/2015		5/4/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015		5/14/2015	
N-Nitrosodiphenylamine	0.0049	(4)	< 2.467	u	< 2.467	u	< 2.467	u	< 4.934	u	< 4.934	u	< 4.934	u	< 2.467	u	< 2.467	u
Phenanthrene	170	(4)	< 1.997	u	< 1.997	u	< 1.997	u	< 3.993	u	< 3.993	u	< 3.993	u	< 1.997	u	< 1.997	u
Pentachlorophenol	1	(2)	< 1.137	u	< 1.137	u	< 1.137	u	< 2.275	u	< 2.275	u	< 2.275	u	< 1.137	u	< 1.137	u
Phenol	5760	(4)	< 1.085	u	< 1.085	u	< 1.085	u	< 2.171	u	< 2.171	u	< 2.171	u	< 1.085	u	< 1.085	u
Pyrene	117	(4)	< 2.318	u	< 2.318	u	< 2.318	u	< 4.636	u	< 4.636	u	< 4.636	u	< 2.318	u	< 2.318	u
Pyridine	20	(1)	< 1.674	u	< 1.674	u	< 1.674	u	< 3.348	u	< 3.348	u	< 3.348	u	< 1.674	u	< 1.674	u
TPH (mg/l)																		
Gasoline Range Organics (GRO)	-		0.028	J	0.033	J	0.21	v	1.5	v	< 0.08	u	< 0.08	u	0.78	v	< 0.04	u
Diesel Range Organics (DRO)	-		< 0.91	u	< 0.91	u	3.1	v	5.5	v	< 0.91	u	< 0.91	u	1	v	< 0.91	u
Motor Oil Range Organics (MRO)	-		< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u	< 5	u

- No screening level or analytical result available

450 - bolded value exceeds screening level

(1) EPA - Regional Screening Levels (Nov. 2015) -Tap Water
(2) EPA - Regional Screening Levels (Nov. 2015) - MCL
(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less
(4) NMED Tap Water Screening Level - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)
(5) EPA Screening Level - Tap Water x 10 for carcinogenic compounds

v = reportable detection above the Practical quantitation limit (PQL)
u - result is not detected at method detection limit (MDL)
j - estimated result at concentration above MDL but less than PQL
z - concentration exceeds MCL

Table 9
Soil Cumulative Risk and Hazard Index Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Maximum Concentration	Maximum Concentration divided by Residential Soil Screening Level	Maximum Concentration divided by Non-Residential Soil Screening Level
CARCINOGENIC CONSTITUENTS							
Metals (mg/kg)							
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.60E+00	6.12E-01	1.21E-01
Volatiles (mg/kg)							
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	4.73E-04	6.02E-06	1.23E-06
Benzene	1.78E+01	(1)	8.72E+01	(4)	8.00E+00	4.50E-01	9.17E-02
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	1.40E+01	1.86E-01	3.81E-02
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	9.36E-03	9.60E-06	1.94E-06
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	8.13E-04	1.99E-06	6.74E-07
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	2.60E+01	5.24E-01	1.64E-01
Semi-volatiles (mg/kg)							
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	7.60E+01	4.22E-01	1.04E-01
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	1.50E+00	3.94E-03	8.19E-04
Carcinogenic Constituents Cumulative Risk x 10^{-5}						**2.20E+00**	**5.19E-01**
NON-CARCINOGENIC CONSTITUENTS							
Metals (mg/kg)							
Antimony	3.13E+01	(1)	1.42E+02	(5)	2.70E+00	8.63E-02	1.91E-02
Barium	1.56E+04	(1)	4.35E+03	(5)	2.90E+03	1.86E-01	6.66E-01
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.80E+00	1.15E-02	1.22E-02
Cadmium	7.05E+01	(1)	7.21E+01	(5)	6.20E-02	8.79E-04	8.59E-04
Chromium	9.66E+01	(1)	1.34E+02	(5)	5.40E+01	5.59E-01	4.04E-01
Cobalt	2.30E+01	(2)	3.50E+02	(6)	9.10E+00	3.96E-01	2.60E-02
Iron	5.50E+04	(2)	8.20E+05	(6)	2.40E+04	4.36E-01	2.93E-02
Lead	4.00E+02	(1)	8.00E+02	(4)	1.70E+01	4.25E-02	2.13E-02
Manganese	1.80E+03	(2)	2.60E+04	(6)	1.30E+03	7.22E-01	5.00E-02
Mercury	2.38E+01	(1)	2.07E+01	(5)	5.30E-01	2.23E-02	2.56E-02
Nickel	1.56E+03	(1)	6.19E+03	(5)	1.70E+01	1.09E-02	2.74E-03
Vanadium	3.94E+02	(1)	6.14E+02	(5)	4.90E+01	1.24E-01	7.98E-02
Zinc	2.35E+04	(1)	1.06E+05	(5)	1.50E+02	6.39E-03	1.41E-03
Volatiles (mg/kg)							
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	2.70E+01	4.66E-01	1.13E-01
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	1.00E+01	1.28E-02	8.33E-04
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	4.24E-03	1.13E-07	4.63E-08
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	9.62E-04	4.81E-06	7.40E-07
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	0.00E+00	0.00E+00	0.00E+00

Table 9
Soil Cumulative Risk and Hazard Index Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Maximum Concentration	Maximum Concentration divided by Residential Soil Screening Level	Maximum Concentration divided by Non-Residential Soil Screening Level
Acetone	6.63E+04	(1)	2.42E+05	(5)	1.50E-01	2.26E-06	6.21E-07
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	1.20E-01	6.77E-03	6.72E-03
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	9.68E-04	6.23E-07	5.97E-07
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	3.10E+00	1.31E-03	1.13E-03
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	2.80E+00	7.18E-04	4.83E-05
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	5.20E+00	1.37E-03	2.17E-04
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.80E+00	2.31E-04	1.50E-05
Toluene	5.23E+03	(1)	1.40E+04	(5)	3.40E+01	6.50E-03	2.42E-03
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	8.60E+01	9.88E-02	1.08E-01
Semi-volatiles (mg/kg)							
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	3.60E+01	2.92E-02	6.69E-03
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	1.30E+02	5.42E-01	4.33E-02
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	5.60E+01	1.75E-02	1.37E-03
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.10E+00	3.49E-03	8.07E-04
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	1.50E+01	8.63E-03	1.99E-03
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.20E+01	2.84E-03	6.72E-04
Non-Carcinogenic Constituents Hazard Index						**3.80E+00**	**1.62E+00**

NMED - Risk Assessment Guidance for Site Investigations and Remediation (Dec. 2014)

EPA - Regional Screening

(1) NMED Residential Screening

(2) EPA Residential Screening

(3) EPA Residential - Screening Levels (June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Closure Permit because the constituent is listed as carcinogenic

(4) NMED Industrial Occupational Screening Level

(5) NMED Construction Worker Screening Level

(6) EPA Industrial - Screening Levels (June 2015)

(7) EPA Industrial - Screening Levels June 2015) multiplied by 10 pursuant to Section IV.D.2 of the Oct. 31, 2013 RCRA Post-Clousre Permit because the constituent is listed as carcinogenic

Table 10
Groundwater Cumulative Risk and Hazard Index Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Screening Levels	Source	Maximum Concentration	Maximum Concentration divided by Residential Groundwater Screening Level
CARCINOGENIC CONSTITUENTS				
Metals (mg/l) DISSOLVED				
Arsenic (D)	1.00E-02	(2)	1.20E-02	1.20E+00
Chromium (D)	5.00E-02	(3)	9.40E-03	1.88E-01
Volatiles (ug/l)				
1,1-Dichloroethane	2.50E+01	(3)	9.30E-01	3.72E-02
1,2-Dichloroethane (EDC)	5.00E+00	(2)	4.80E-01	9.60E-02
1-Methylnaphthalene	1.10E+01	(5)	7.00E+01	6.36E+00
Benzene	5.00E+00	(2)	2.70E+01	5.40E+00
Ethylbenzene	7.00E+02	(2)	4.00E+01	5.71E-02
Methyl tert-butyl ether (MTBE)	1.43E+02	(4)	1.50E+02	1.05E+00
Naphthalene	1.65E+00	(4)	4.50E+01	2.73E+01
Carcinogenic Constituents Cumulative Risk x 10^{-5}				**4.17E+01**
NON-CARCINOGENIC CONSTITUENTS				
Metals TOTAL & Water Quality Parameters (mg/l)				
Cyanide	2.00E-01	(3)	1.40E-01	7.00E-01
Mercury	2.00E-03	(3)	7.50E-04	3.75E-01
Chloride	2.50E+02	(3)	7.10E+03	2.84E+01
Fluoride	1.60E+00	(3)	1.30E+00	8.13E-01
Sulfate	6.00E+02	(3)	1.10E+03	1.83E+00
Metals (mg/l) DISSOLVED				
Antimony (D)	6.00E-03	(2)	9.30E-04	1.55E-01
Barium (D)	1.00E+00	(3)	4.50E-01	4.50E-01
Beryllium (D)	4.00E-03	(2)	9.00E-04	2.25E-01
Cobalt (D)	5.00E-02	(3)	2.30E-02	4.60E-01

Table 10
Groundwater Cumulative Risk and Hazard Index Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	Screening Levels	Source	Maximum Concentration	Maximum Concentration divided by Residential Groundwater Screening Level
Iron (D)	1.00E+00	(3)	3.90E+00	3.90E+00
Lead (D)	1.50E-02	(2)	6.80E-03	4.53E-01
Manganese (D)	2.00E-01	(3)	3.90E+00	1.95E+01
Nickel (D)	3.72E-01	(4)	6.50E-01	1.75E+00
Selenium (D)	5.00E-02	(3)	4.10E-02	8.20E-01
Vanadium (D)	6.31E-02	(4)	1.60E-02	2.54E-01
Zinc (D)	1.00E+01	(3)	1.50E-01	1.50E-02
Volatiles (ug/l)				
1,1-Dichloroethene	5.00E+00	(3)	1.20E-01	2.40E-02
1,2,4-Trimethylbenzene	1.50E+01	(1)	6.40E+01	4.27E+00
1,3,5-Trimethylbenzene	1.20E+01	(1)	2.20E+01	1.83E+00
2-Butanone	5.56E+03	(4)	2.90E+00	5.22E-04
2-Methylnaphthalene	3.60E+01	(1)	9.80E+01	2.72E+00
Acetone	1.41E+04	(4)	9.70E+00	6.88E-04
Isopropylbenzene	4.47E+02	(4)	8.50E+00	1.90E-02
Toluene	7.50E+02	(3)	6.00E+00	8.00E-03
Xylenes, Total	6.20E+02	(3)	2.30E+02	3.71E-01
Non-Carcinogenic Constituents Hazard Index				**6.93E+01**

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

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

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

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

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

Figures

Figure 1	Site Location Map
Figure 2	SWMU No. 10 Location Map
Figure 3	SWMU No. 10 1990 RFI Sample Locations
Figure 4	SWMU No. 10 1994 RFI Sample Locations
Figure 5	Topographic Map
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Figure 30 **Manganese Groundwater Concentration Map**
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Figure 33 **1,3,5-Trimethlybenzene Groundwater Concentration Map**
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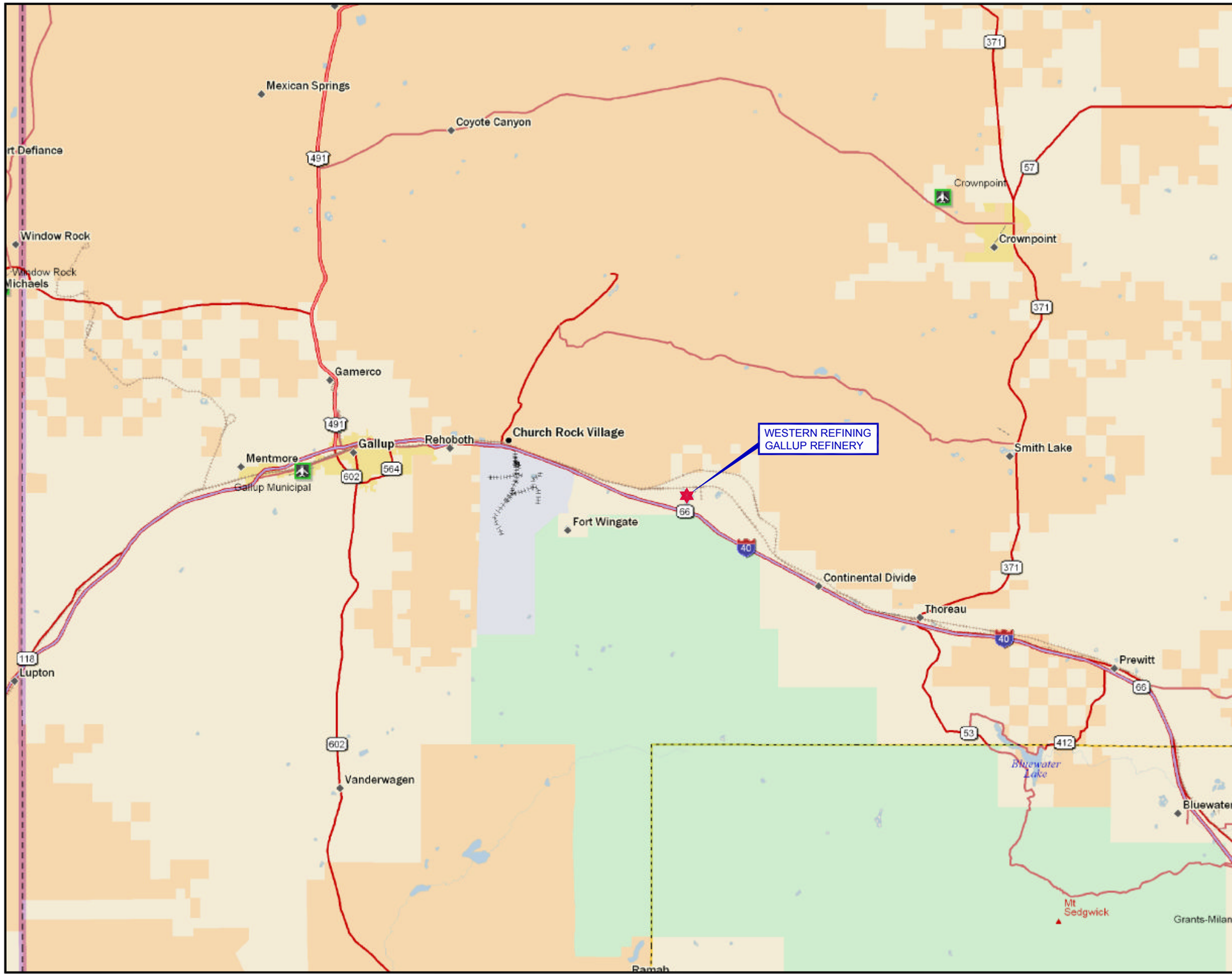
Figure 39 **Proposed Soil Boring Map**



Map Source: DeLorme Street Atlas USA 2007 Plus.

N

0 5
SCALE IN MILES

Western Refining
GALLUP REFINERY

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

FIGURE 1
SITE LOCATION MAP
GALLUP REFINERY

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Suite 300
Austin, Texas 78759

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

N

0 100
SCALE IN FEET

LEGEND

SWMU No. 10 LOCATION

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 09/09/14	FILE: WestRef-dB05

FIGURE 2
SWMU No. 10 LOCATION MAP

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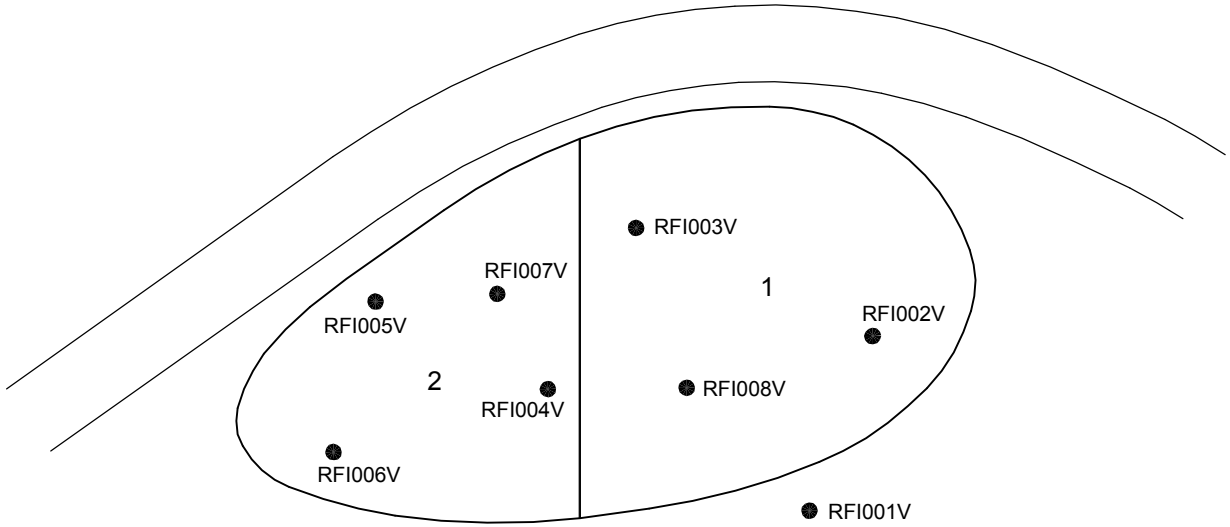

0 50
SCALE IN FEET

LEGEND

RFI002V ● 1990 RFI SOIL BORING LOCATION AND IDENTIFICATION NUMBER

Western Refining
GALLUP REFINERY

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

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

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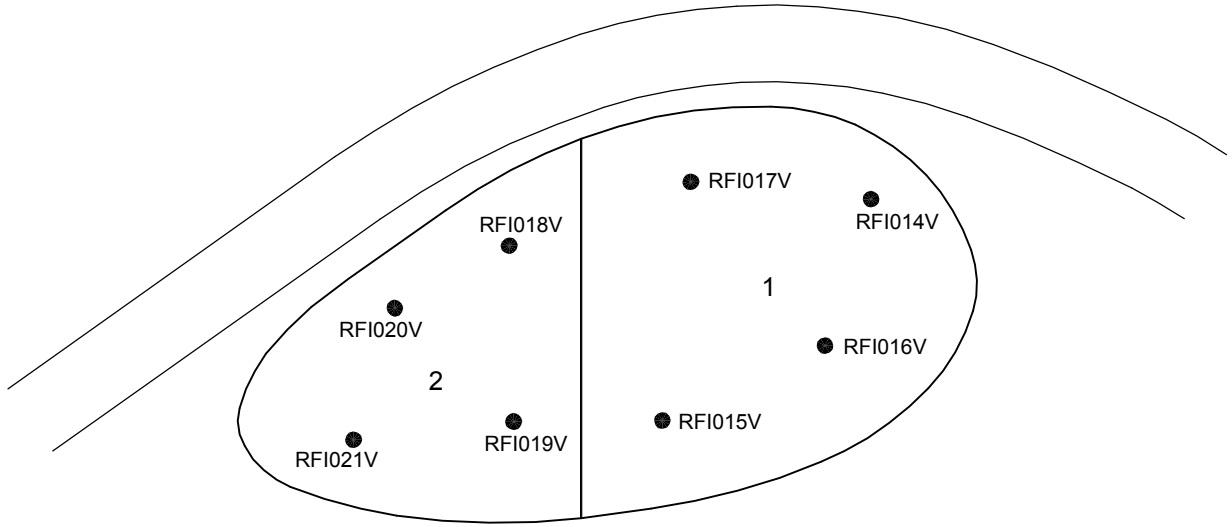

0 50
SCALE IN FEET

LEGEND

RFI014V ● 1994 RFI SOIL BORING LOCATION AND IDENTIFICATION NUMBER

Western Refining
GALLUP REFINERY

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

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

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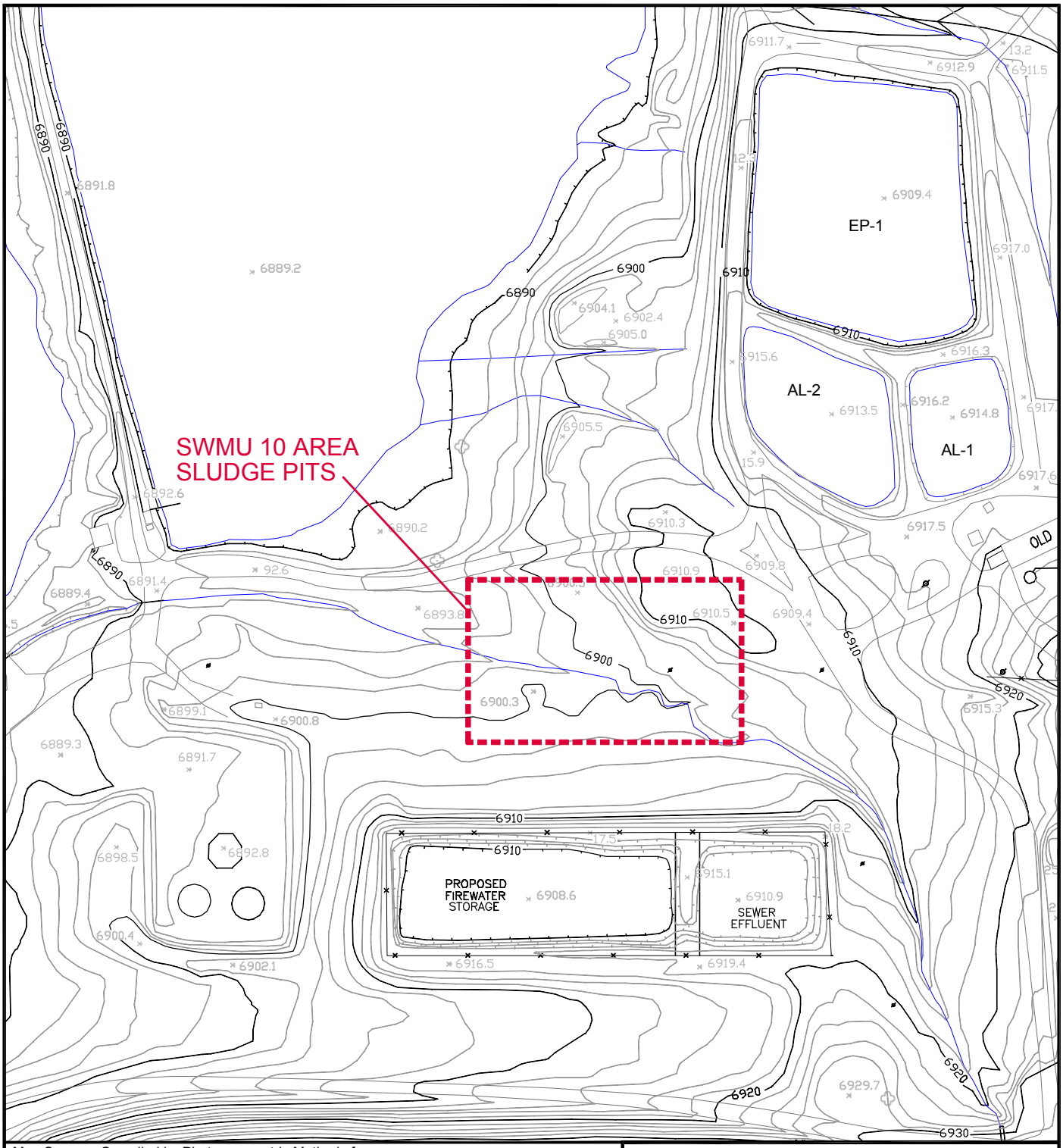

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

0 150
SCALE IN FEET

QUADRANGLE LOCATION

Western Refining
GALLUP REFINERY

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

FIGURE 5
TOPOGRAPHIC MAP
GALLUP REFINERY

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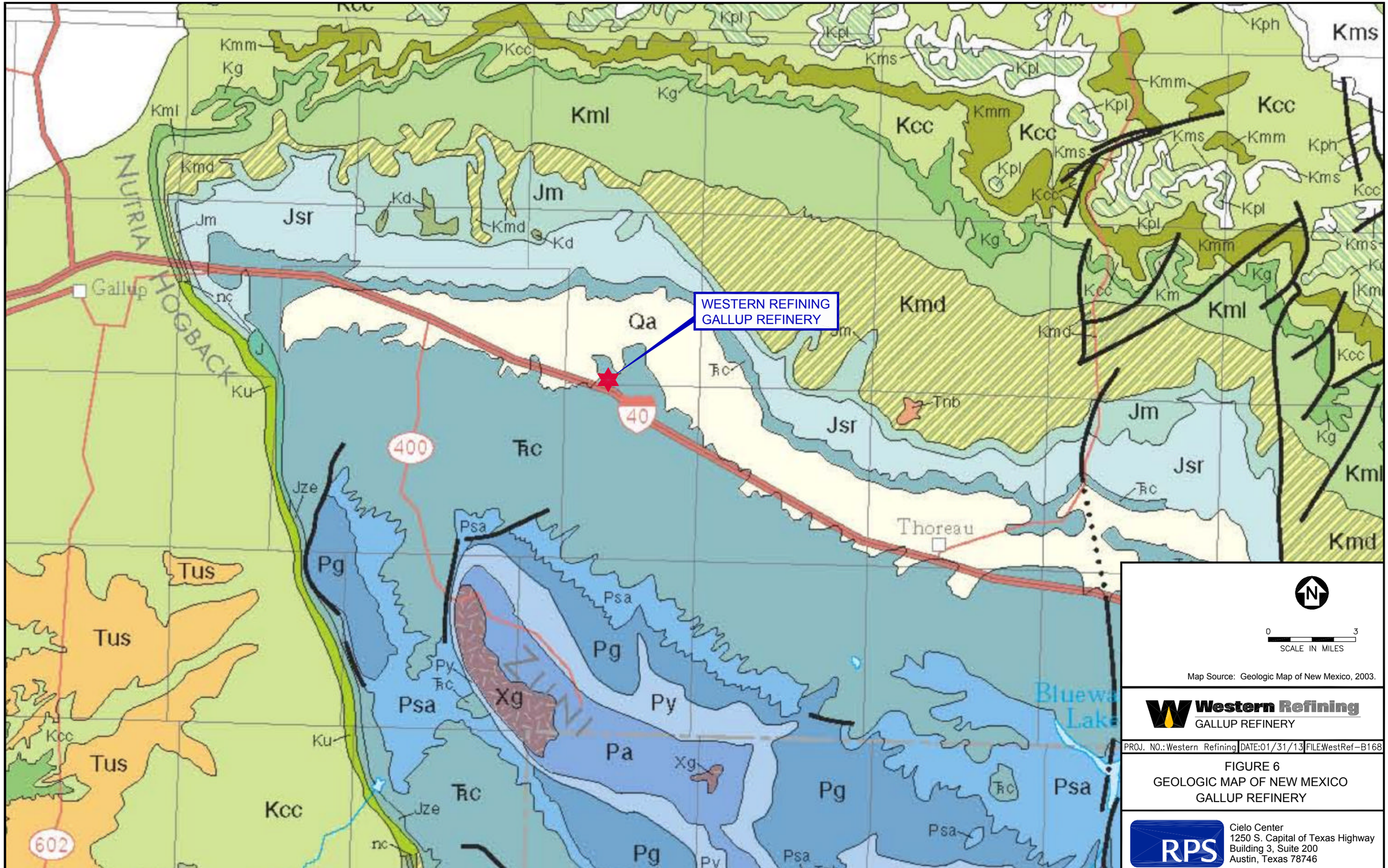
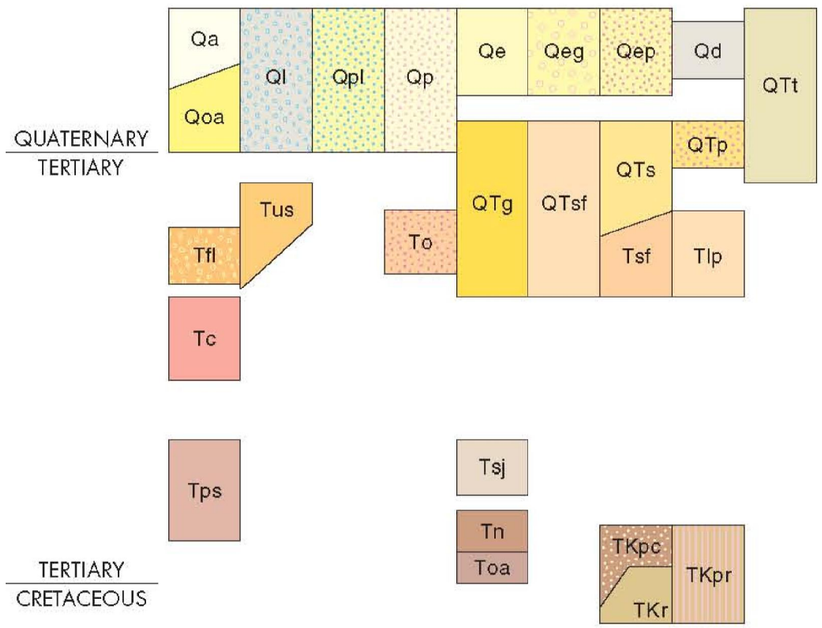
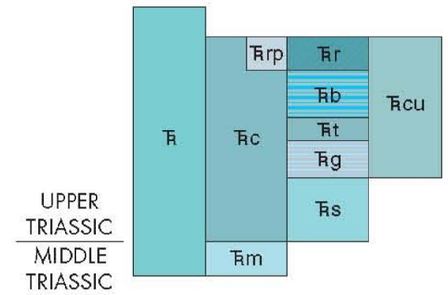
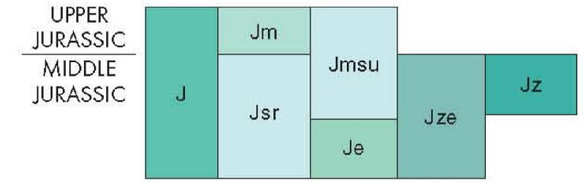

WESTERN REFINING
GALLUP REFINERY
Gallup
Thoreau
NUTRIA HOGBACK
ZUNI
Bluewater Lake
Kml
Kcc
Kmd
Kms
Kmm
Kpl
Kph
Kg
Kd
Jm
Jsr
Qa
Tnb
Tc
Tus
Pg
Psa
Py
Pa
Xg
Jze
Ku
nc
J
40
400
602
0
3
SCALE IN MILES
Map Source: Geologic Map of New Mexico, 2003.
Western Refining
GALLUP REFINERY
PROJ. NO.: Western Refining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

Sedimentary







TRIASSIC

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

- **Ꞧ** **Triassic rocks, undivided**—Continental red beds
- **Ꞧrp** **Rock Point Formation of Chinle Group** (Upper Triassic)—May locally include Wingate Sandstone (Triassic)
- **Ꞧc** **Chinle Group** (Upper Triassic)—Map unit includes Moenkopi Formation (Middle Triassic) at base in many areas; in eastern part of state the following five formations are mapped:
- **Ꞧr** **Redonda Formation** (Upper Triassic)
- **Ꞧb** **Bull Canyon Formation** (Norian)
- **Ꞧt** **Trujillo Formation** (Norian)
- **Ꞧg** **Garita Creek Formation** (Carnian)
- **Ꞧs** **Santa Rosa Formation** (Carnian)—Includes Moenkopi Formation (Middle Triassic) at base in most areas
- **Ꞧcu** **Upper Chinle Group, Garita Creek through Redonda Formations, undivided**
- **Ꞧm** **Moenkopi Formation** (Middle Triassic)

JURASSIC

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

- **J** **Upper and Middle Jurassic rocks, undivided.** In southwest includes the basalt-bearing Broken Jug Formation
- **Jm** **Morrison Formation**—Upper Jurassic nonmarine rocks
- **Jmsu** **Morrison Formation and upper San Rafael Group** (lowermost Cretaceous?-upper Jurassic)
- **Jz** **Zuni Sandstone** (Callovian)—Consists of undivided equivalents of the Summerville Formation and Bluff Sandstone; restricted to Zuni Basin area
- **Jze** **Zuni and Entrada Sandstones, undivided**
- **Je** **Entrada Sandstone** (Middle Jurassic)
- **Jsr** **San Rafael Group** (Middle Jurassic)—Consists of Entrada Sandstone, Todilto and Summerville Formations, Bluff Sandstone, and locally Zuni Sandstone (or only Acoma Tongue of Zuni)

DESCRIPTION OF MAP UNITS

QUATERNARY

- **Qa** Alluvium (Holocene to upper Pleistocene)
- **Ql** Landslide deposits and colluvium (Holocene to Pleistocene)—Landslide deposits on western flanks of Socorro Mountains not shown for clarity
- **Qpl** Lacustrine and playa deposits (Holocene)—Includes associated alluvial and eolian deposits of major lake basins
- **Qp** Piedmont alluvial deposits (Holocene to lower Pleistocene)—Includes deposits of higher gradient tributaries bordering major stream valleys, alluvial veneers of the piedmont slope, and alluvial fans. May locally include uppermost Pliocene deposits

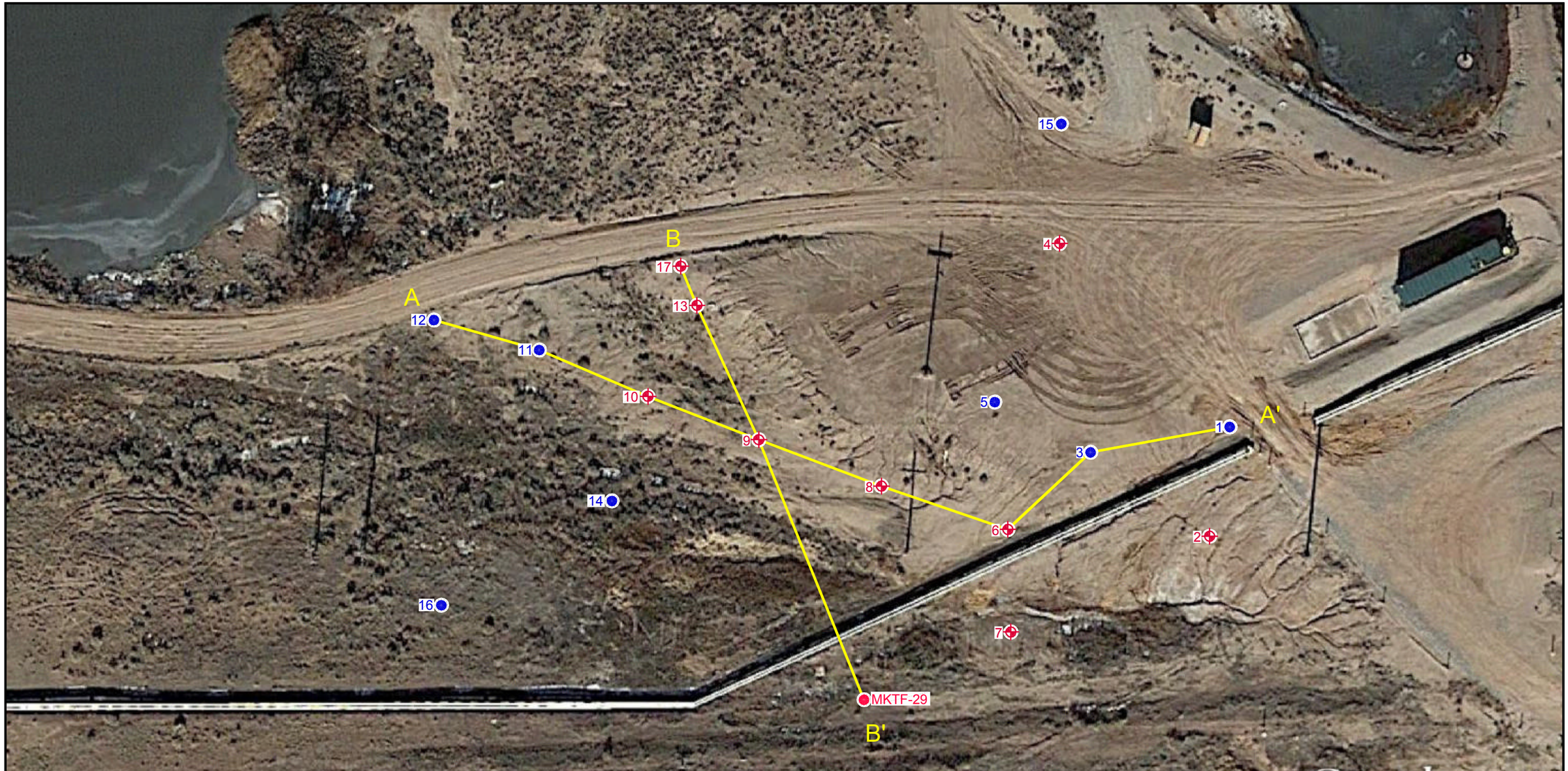
Map Source: Geologic Map of New Mexico, 2003.

Western Refining
GALLUP REFINERY

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

FIGURE 6
GEOLOGIC MAP OF NEW MEXICO
GALLUP REFINERY

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



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

0 40
SCALE IN FEET

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

MKTF-29 MONITORING WELL LOCATION (PERMANENT WELL) AND IDENTIFICATION NUMBER

A——A' LINE OF CROSS-SECTION

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/17/16	FILE: WestRef-dB93

FIGURE 7
CROSS SECTION LOCATION MAP
SWMU No. 10

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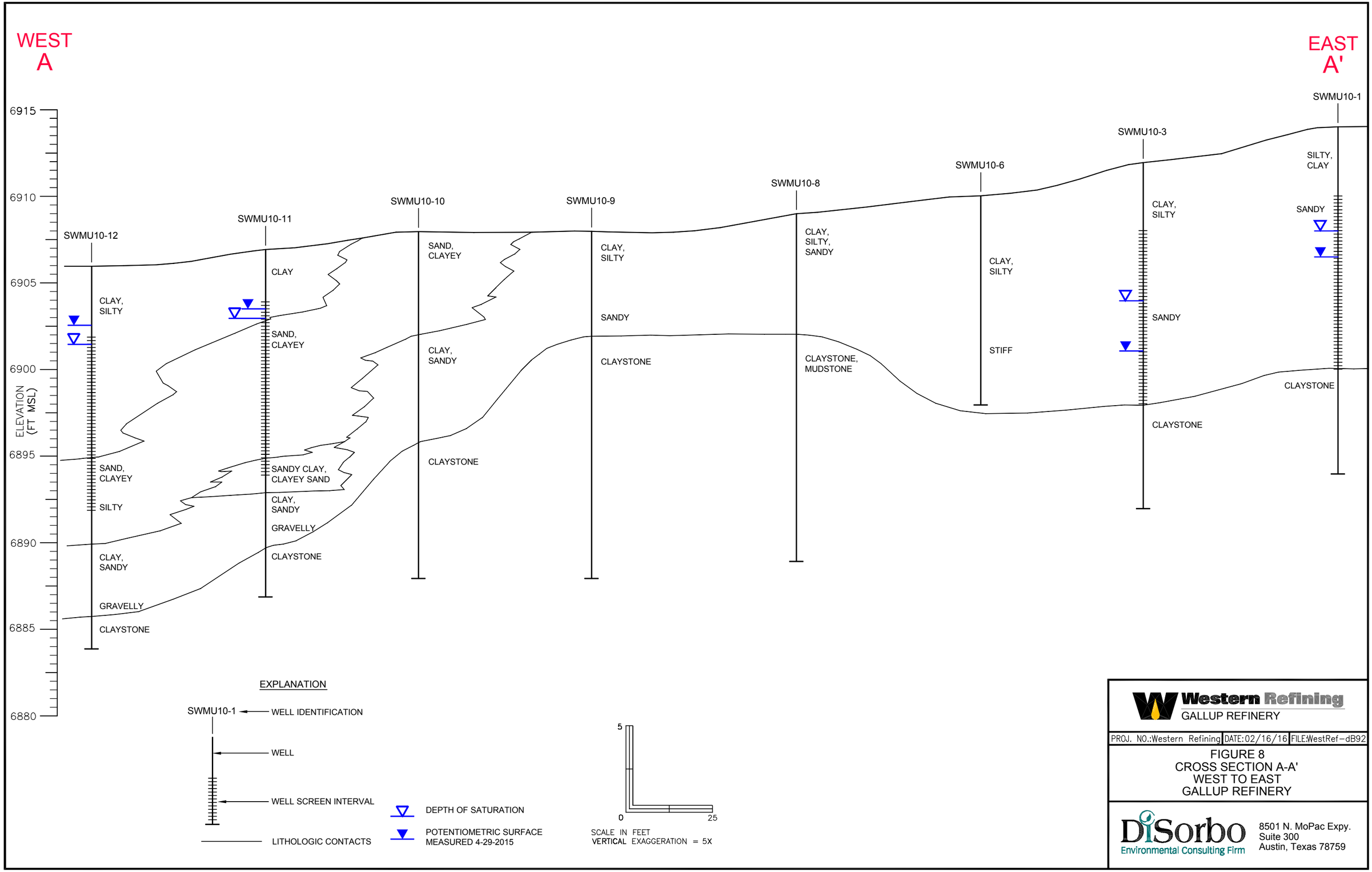

Western Refining
GALLUP REFINERY

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

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

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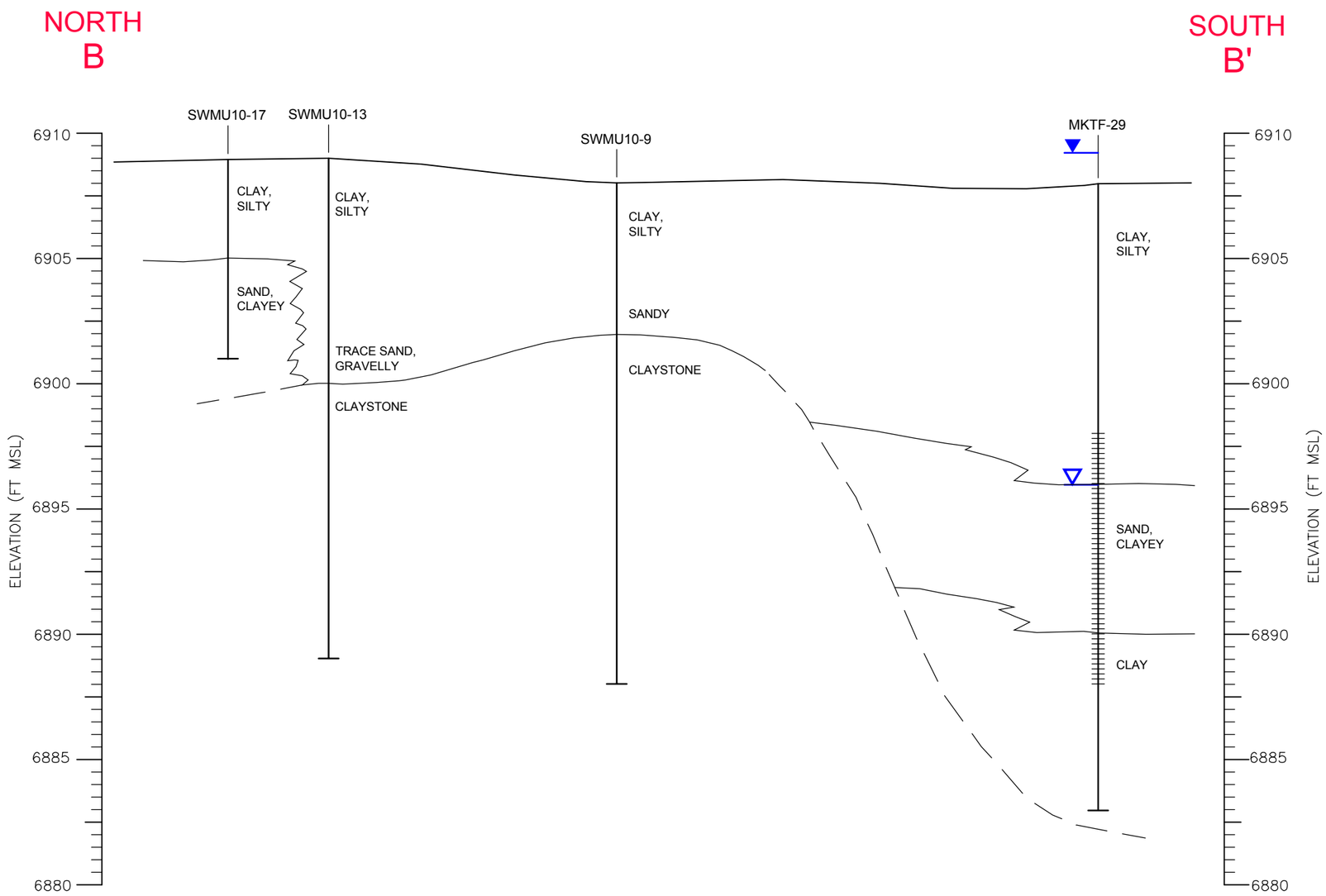

EXPLANATION

MKTF-29 ← WELL IDENTIFICATION

WELL

WELL SCREEN INTERVAL

LITHOLOGIC CONTACTS

DEPTH OF SATURATION

POTENTIOMETRIC SURFACE MEASURED 6-10-2015

5

0 25

SCALE IN FEET
VERTICAL EXAGGERATION = 5X

Western Refining
GALLUP REFINERY

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

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

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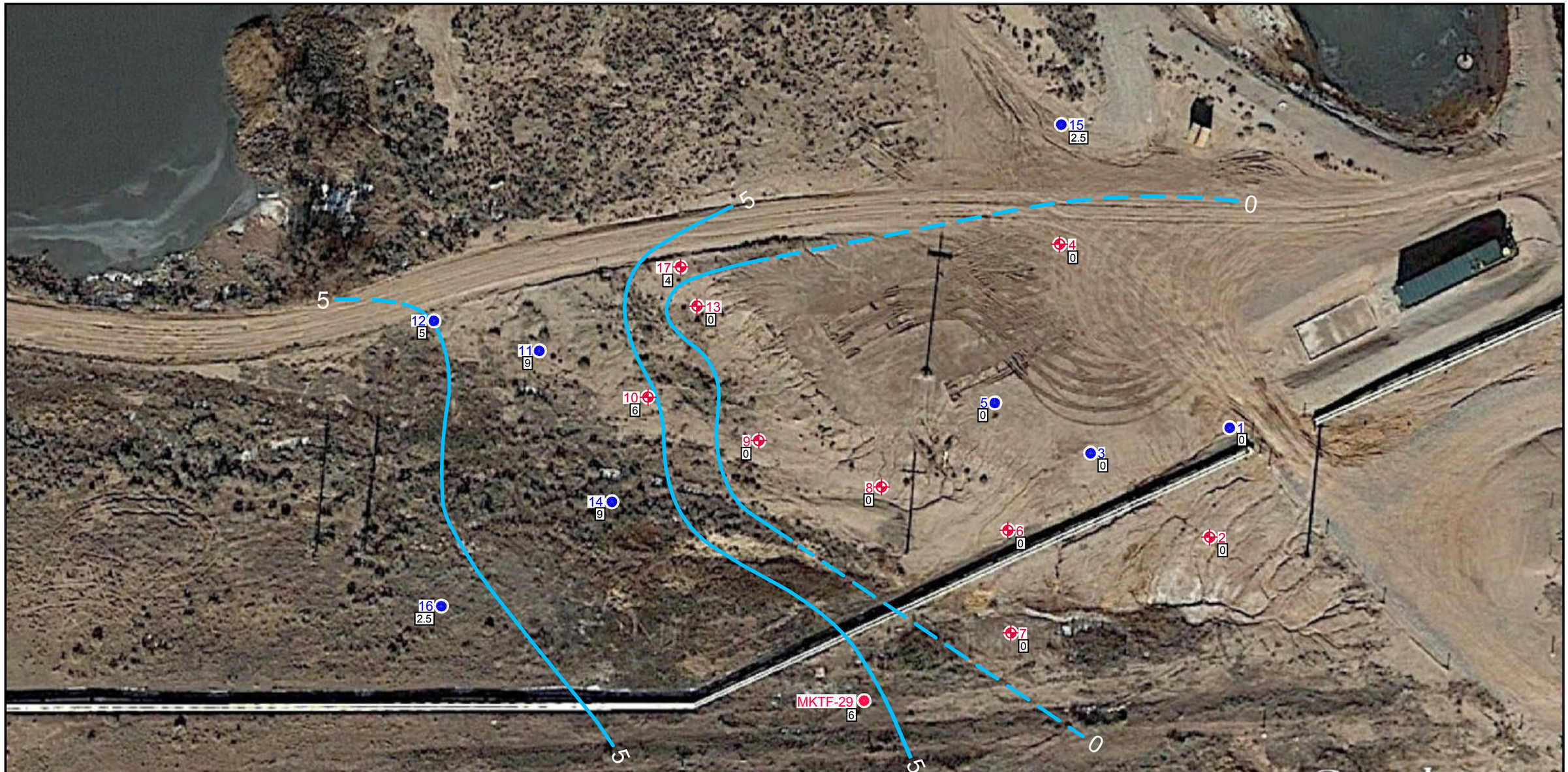

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

MKTF-29 MONITORING WELL LOCATION (PERMANENT WELL) AND IDENTIFICATION NUMBER

5 CONTOUR LINE OF SAND THICKNESS (FT)

2.5 SAND THICKNESS (FT)

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

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

FIGURE 10

SAND ISOPACH MAP
SWMU No. 10

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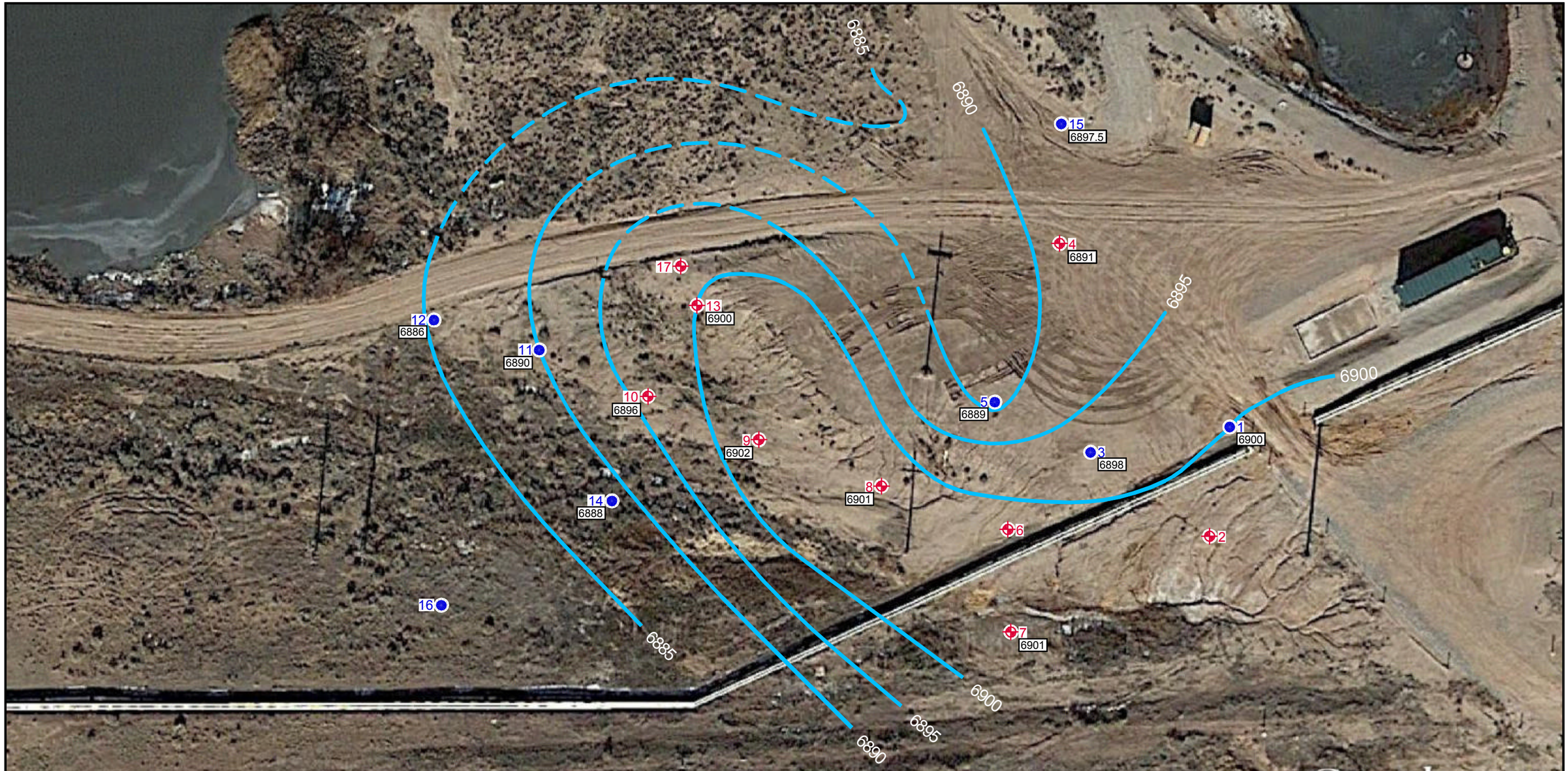

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

6900 CONTOUR LINE ESTIMATED ELEVATION ON TOP OF BEDROCK (ABOVE MSL)

6901 ESTIMATED ELEVATION ON TOP OF BEDROCK (ABOVE MSL)

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

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

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

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Austin, Texas 78759

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

LEGEND

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

N

0 100
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

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

FIGURE 12
POTENTIOMETRIC SURFACE MAP
MARCH 2015
SWMU No. 10

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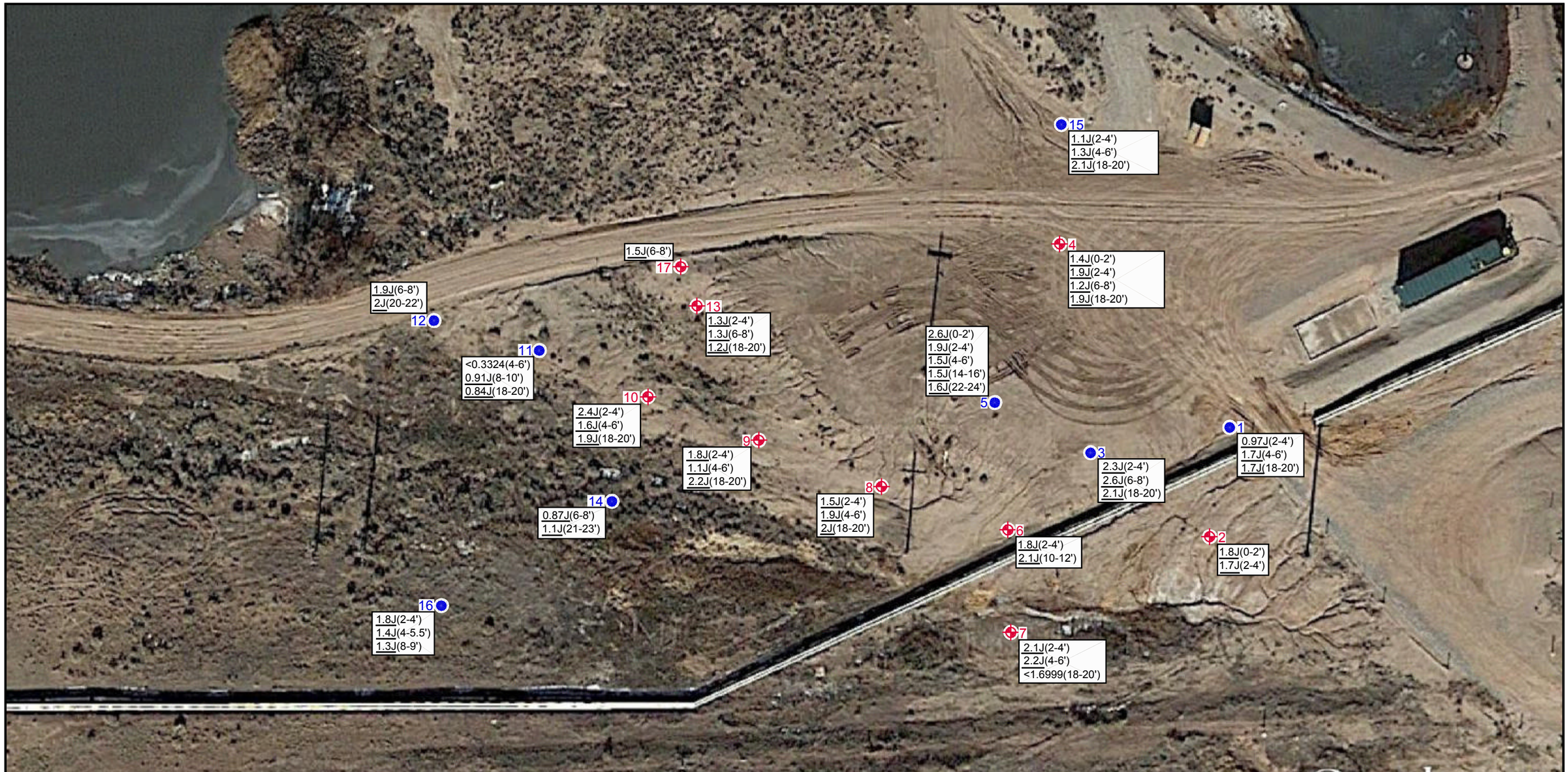

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

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

0.299 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 02/13/16 | FILE: WestRef-dB75

FIGURE 13
ARSENIC
SOILS CONCENTRATION MAP
SWMU No. 10

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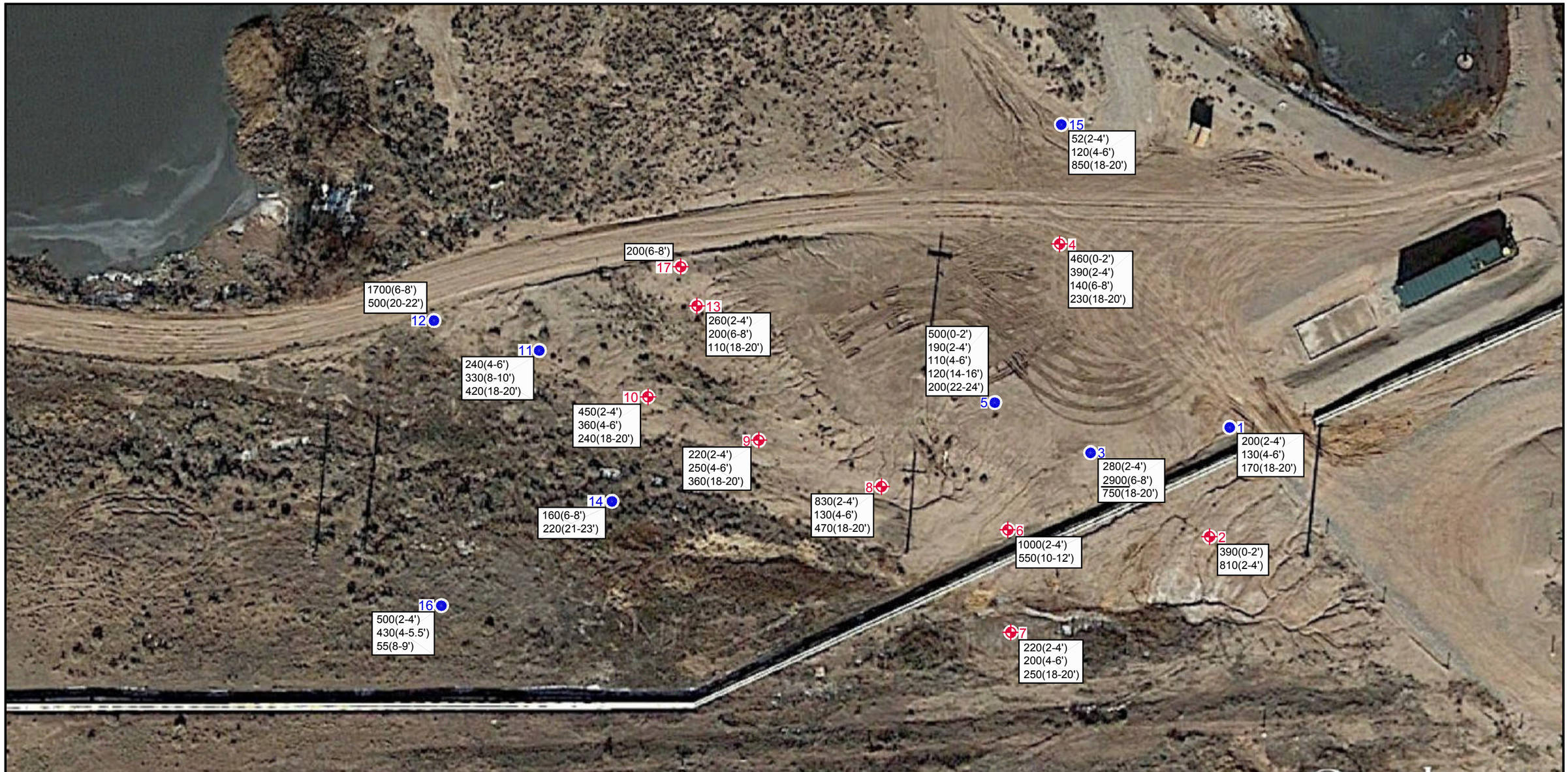

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

500(0-2') BARIUM CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

2700 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/13/16	FILE: WestRef-dB76

FIGURE 14
BARIUM
SOILS CONCENTRATION MAP
SWMU No. 10

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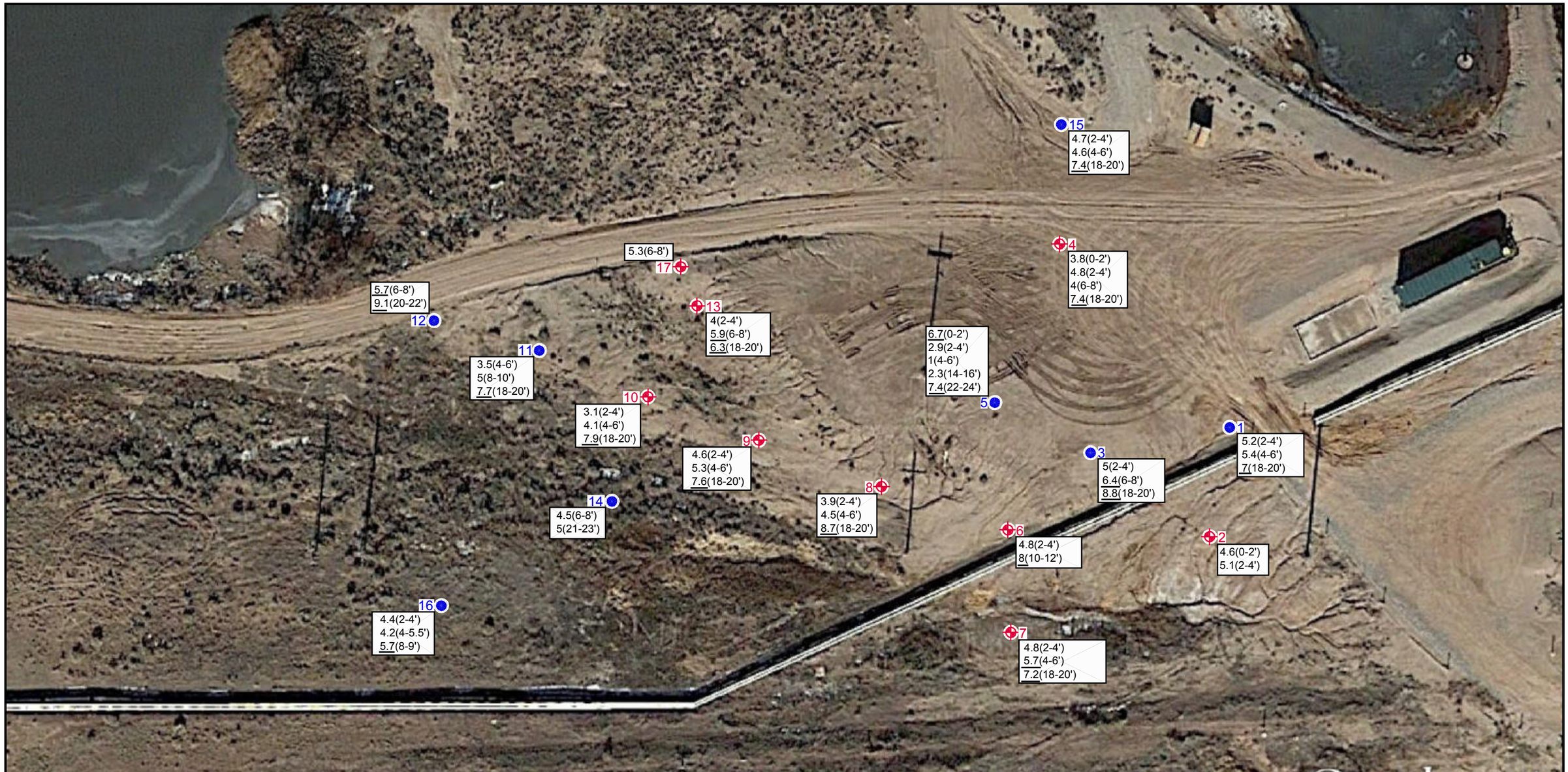

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

3.8(0-2') COBALT CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

5.4 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 02/13/16 | FILE: WestRef-dB77

FIGURE 15
COBALT
SOILS CONCENTRATION MAP
SWMU No. 10

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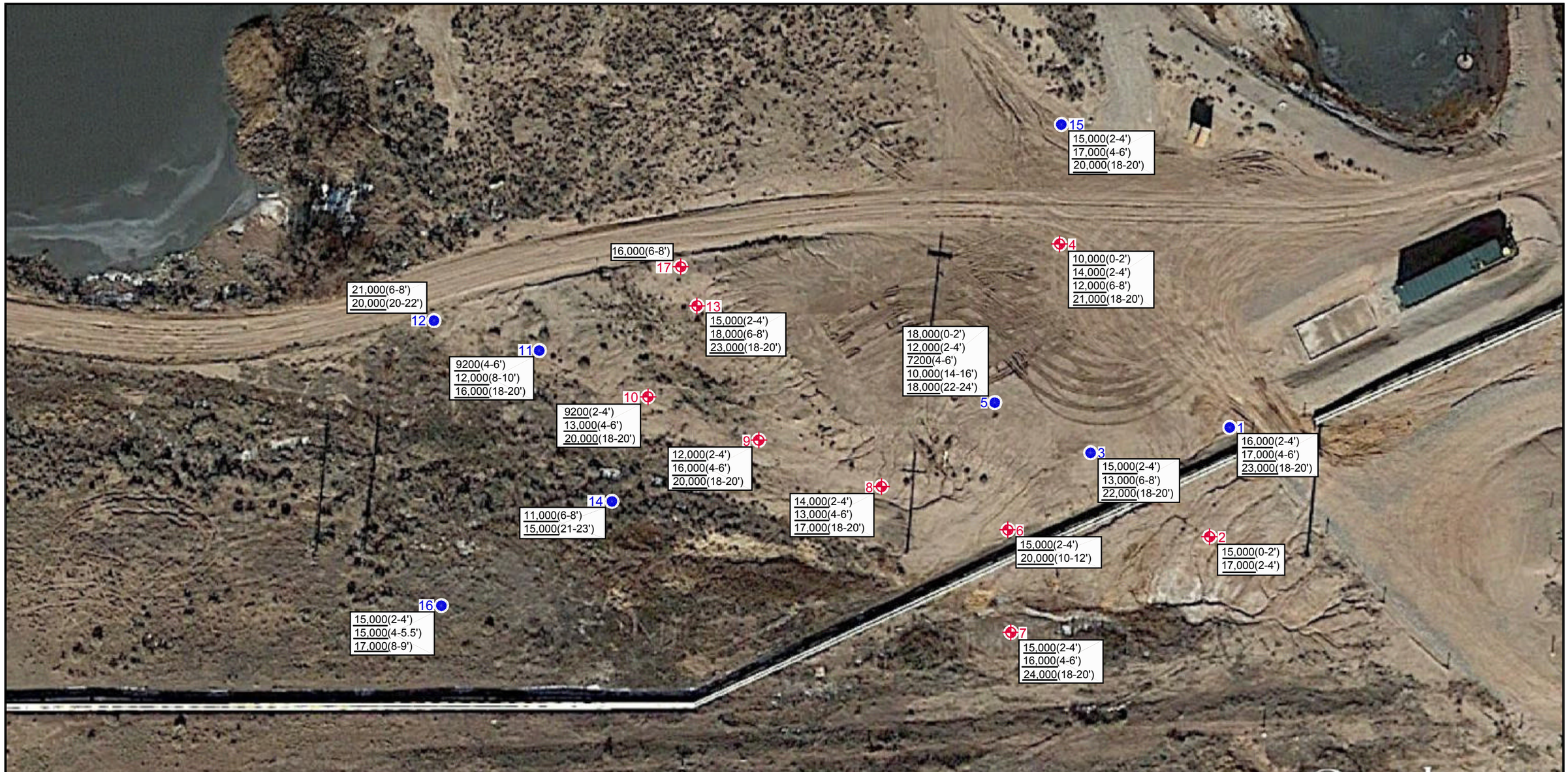
Austin, Texas 78759



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

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

10,000(0-2') IRON CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

7000 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 02/13/16 | FILE: WestRef-dB78

FIGURE 16
IRON
SOILS CONCENTRATION MAP
SWMU No. 10

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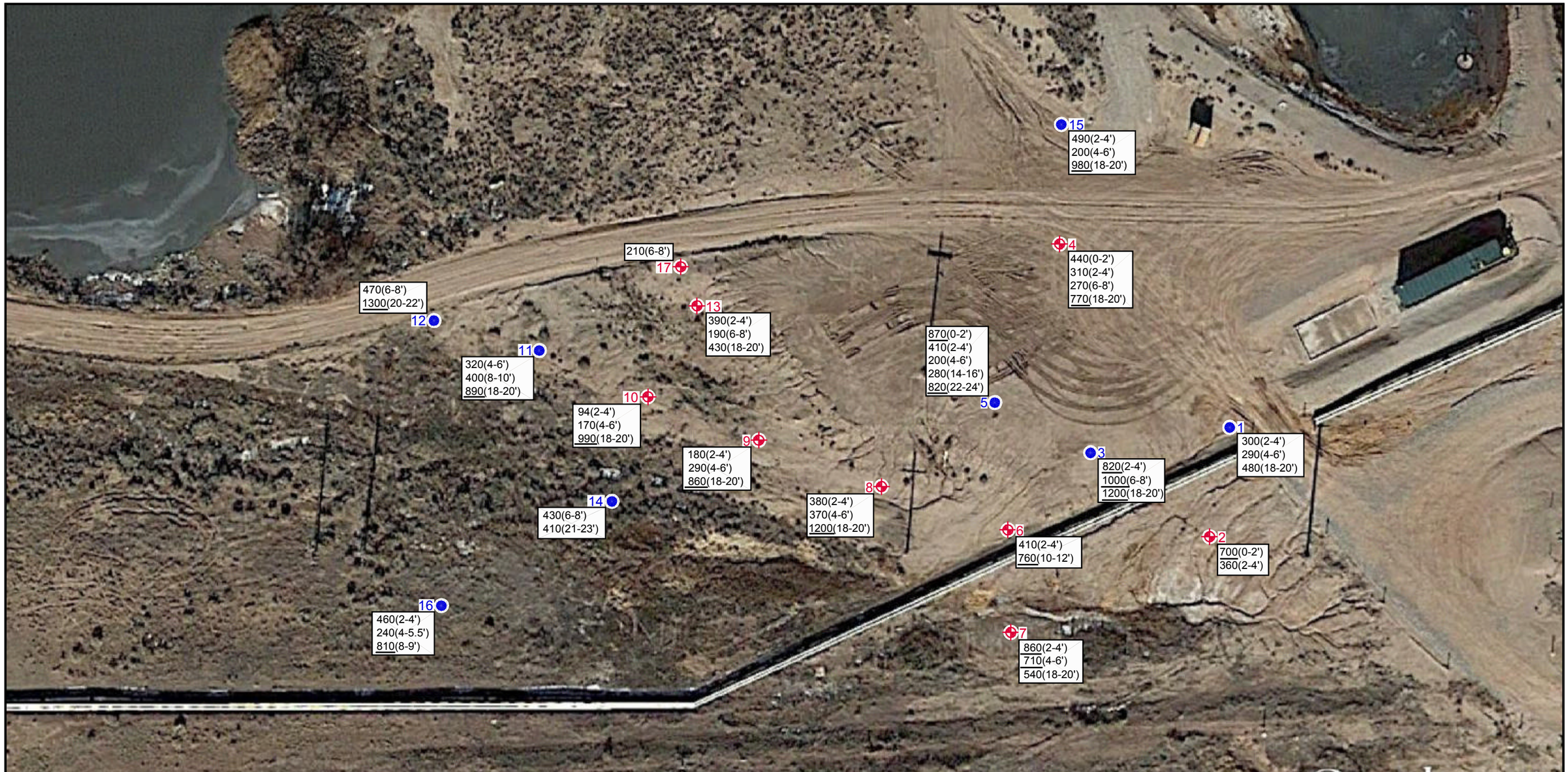
Austin, Texas 78759



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

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

440(0-2') MANGANESE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

560 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 02/13/16 | FILE: WestRef-dB79

FIGURE 17
MANGANESE
SOILS CONCENTRATION MAP
SWMU No. 10

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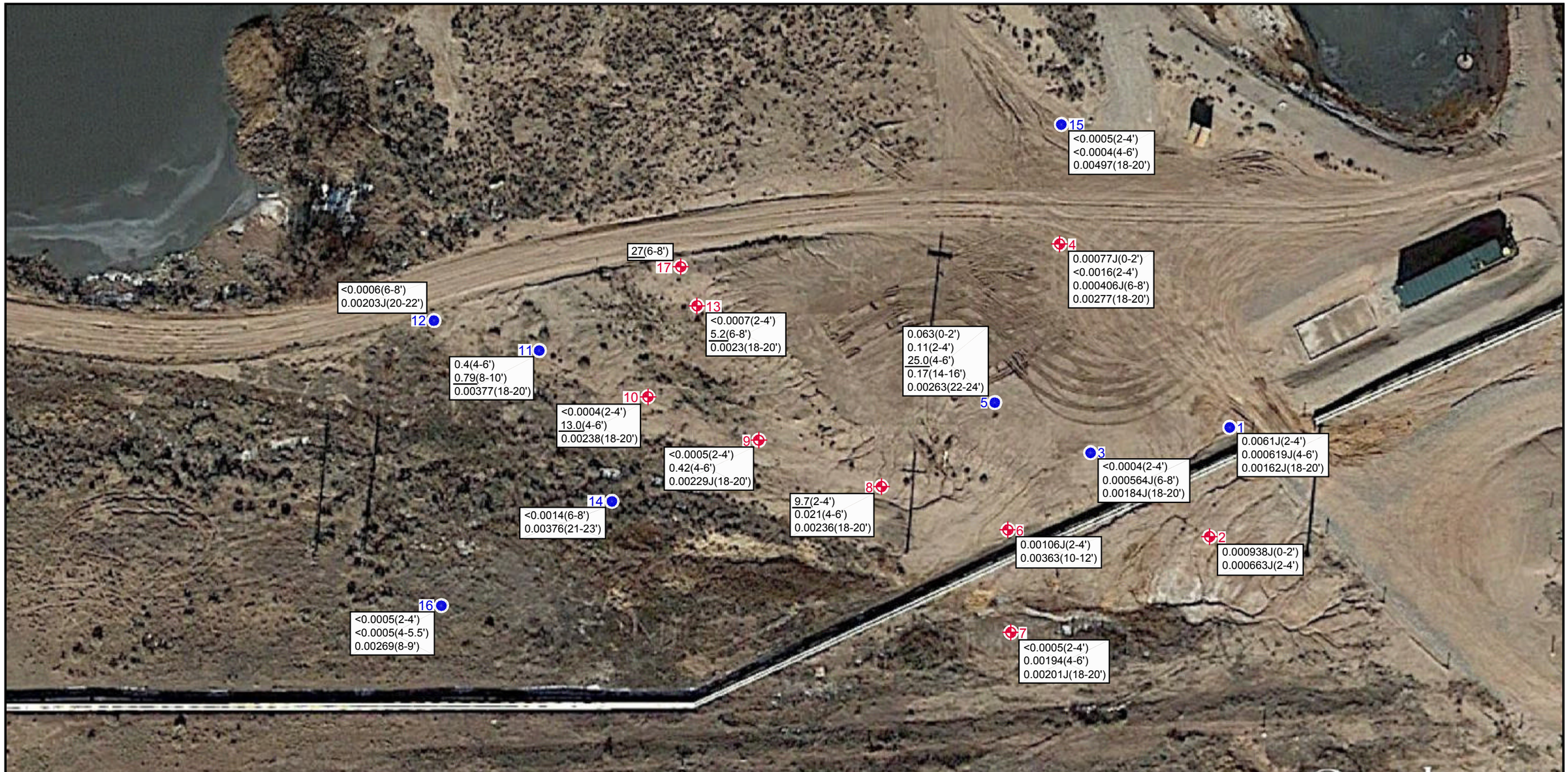

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

0.063(0-2') 1,2,4- TRIMETHYLBENZENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

0.42 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 12/19/15	FILE: WestRef-dB66

FIGURE 18
1,2,4- TRIMETHYLBENZENE
SOILS CONCENTRATION MAP
SWMU No. 10

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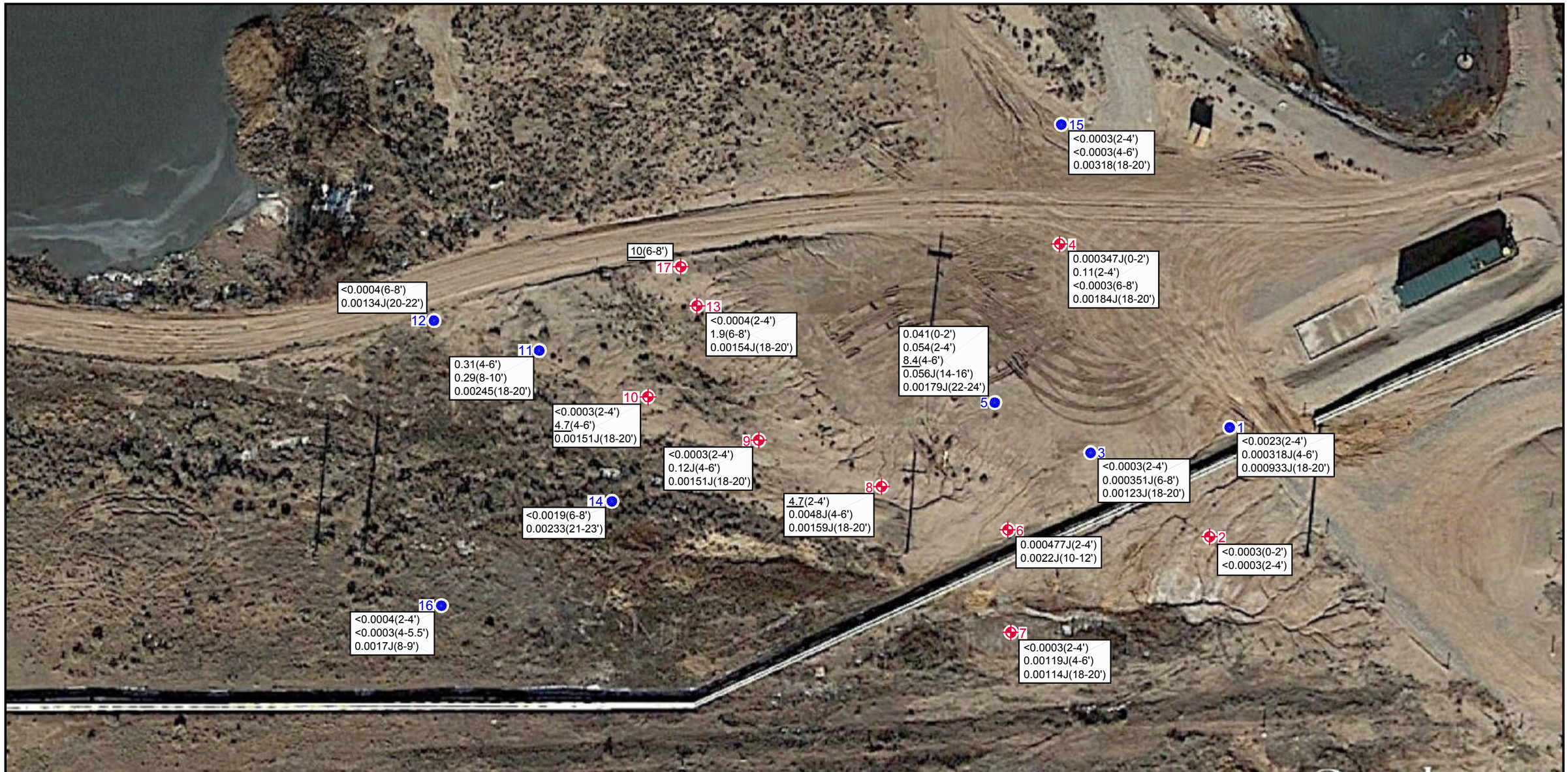
Austin, Texas 78759



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

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

0.041(0-2') 1,3,5- TRIMETHYLBENZENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

3.4 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 02/18/16 | FILE: WestRef-dB97

FIGURE 19
1,3,5- TRIMETHYLBENZENE
SOILS CONCENTRATION MAP
SWMU No. 10

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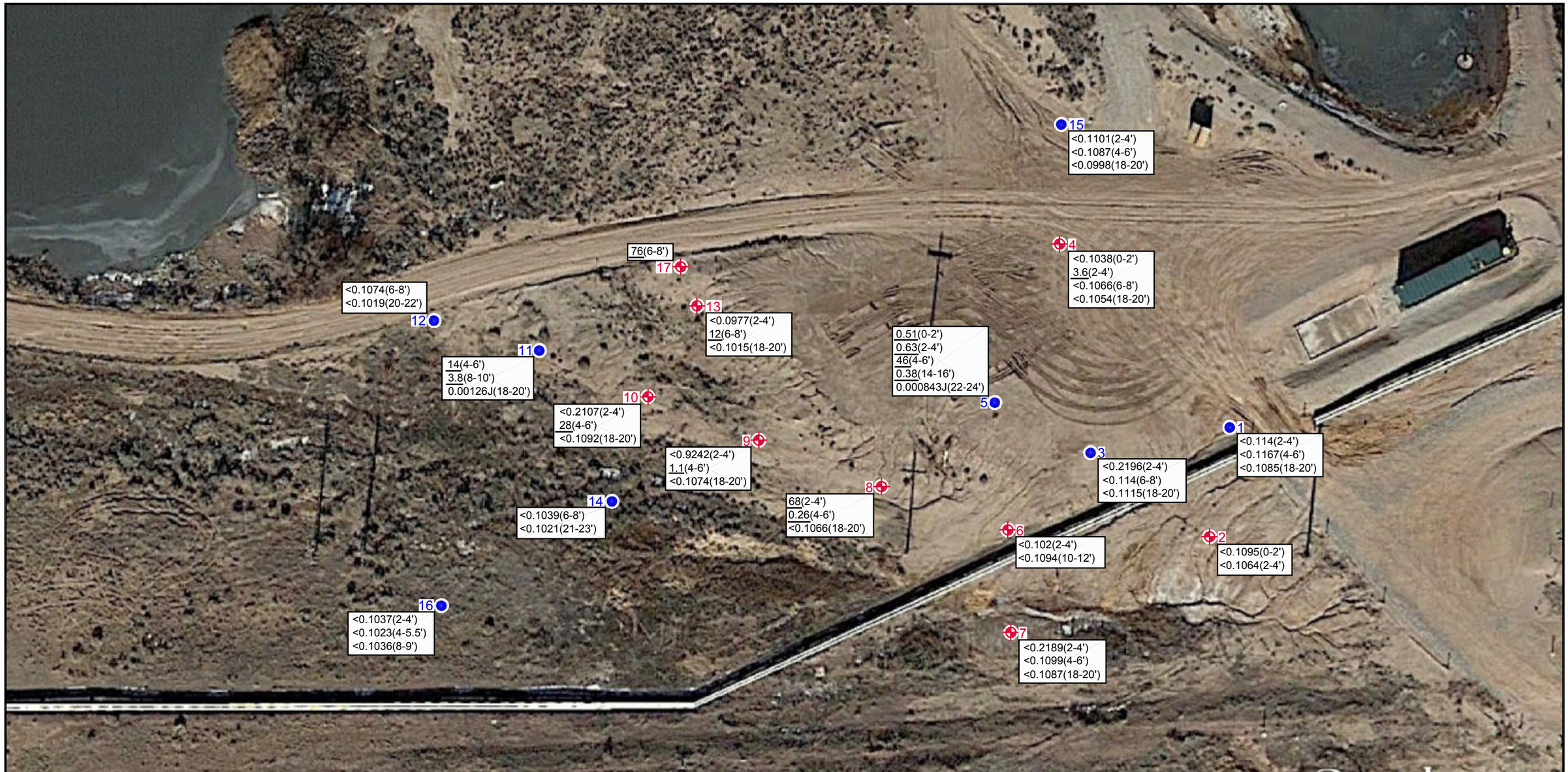
Austin, Texas 78759



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

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
0.51(0-2')	1-METHYLNAPHTHALENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
0.116	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 12/19/15 | FILE: WestRef-dB70

FIGURE 20
1-METHYLNAPHTHALENE
SOILS CONCENTRATION MAP
SWMU No. 10

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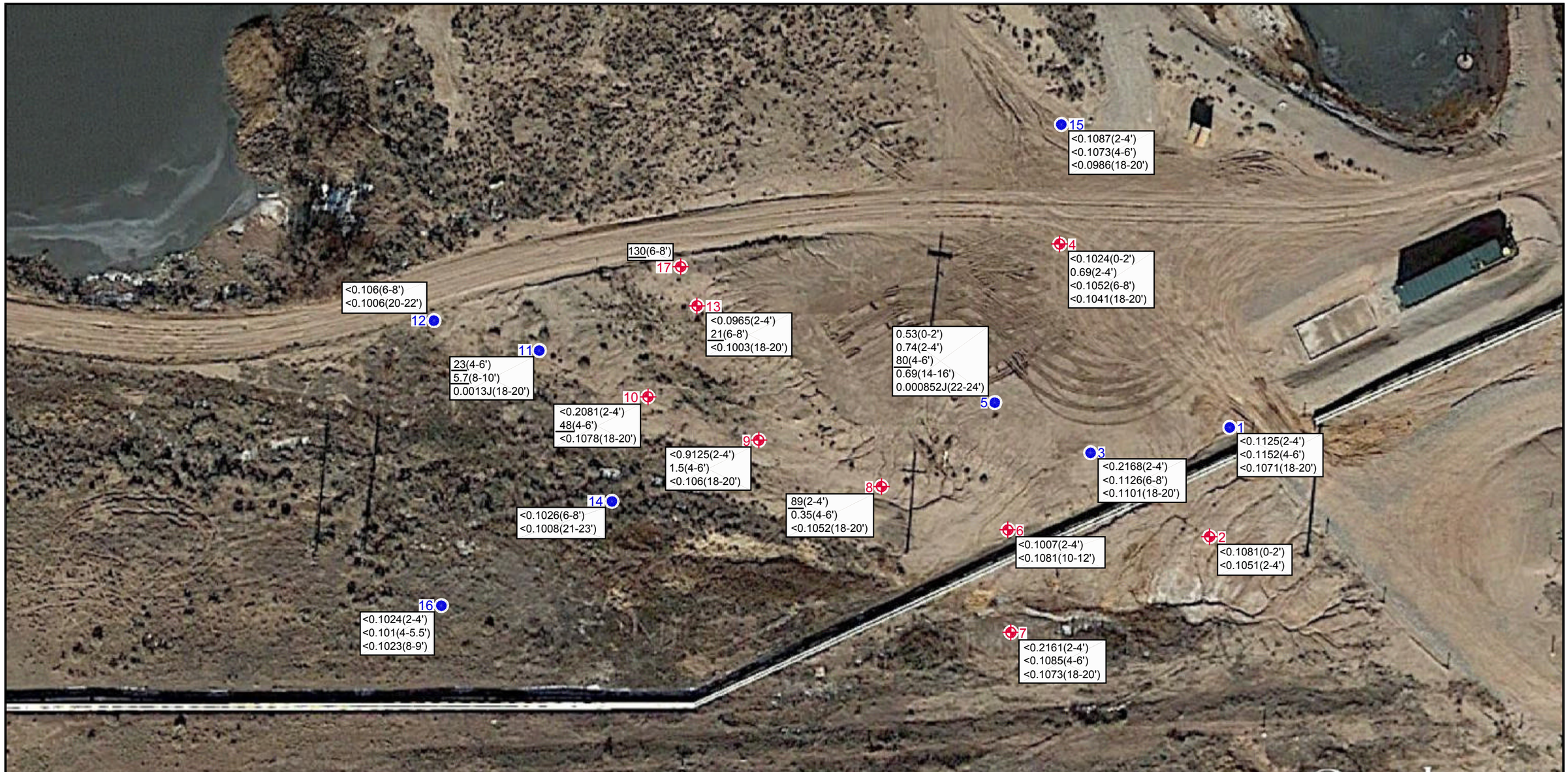

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

0.53(0-2') 2-METHYLNAPHTHALENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

3.8 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 12/27/15 | FILE: WestRef-dB71

FIGURE 21
2-METHYLNAPHTHALENE
SOILS CONCENTRATION MAP
SWMU No. 10

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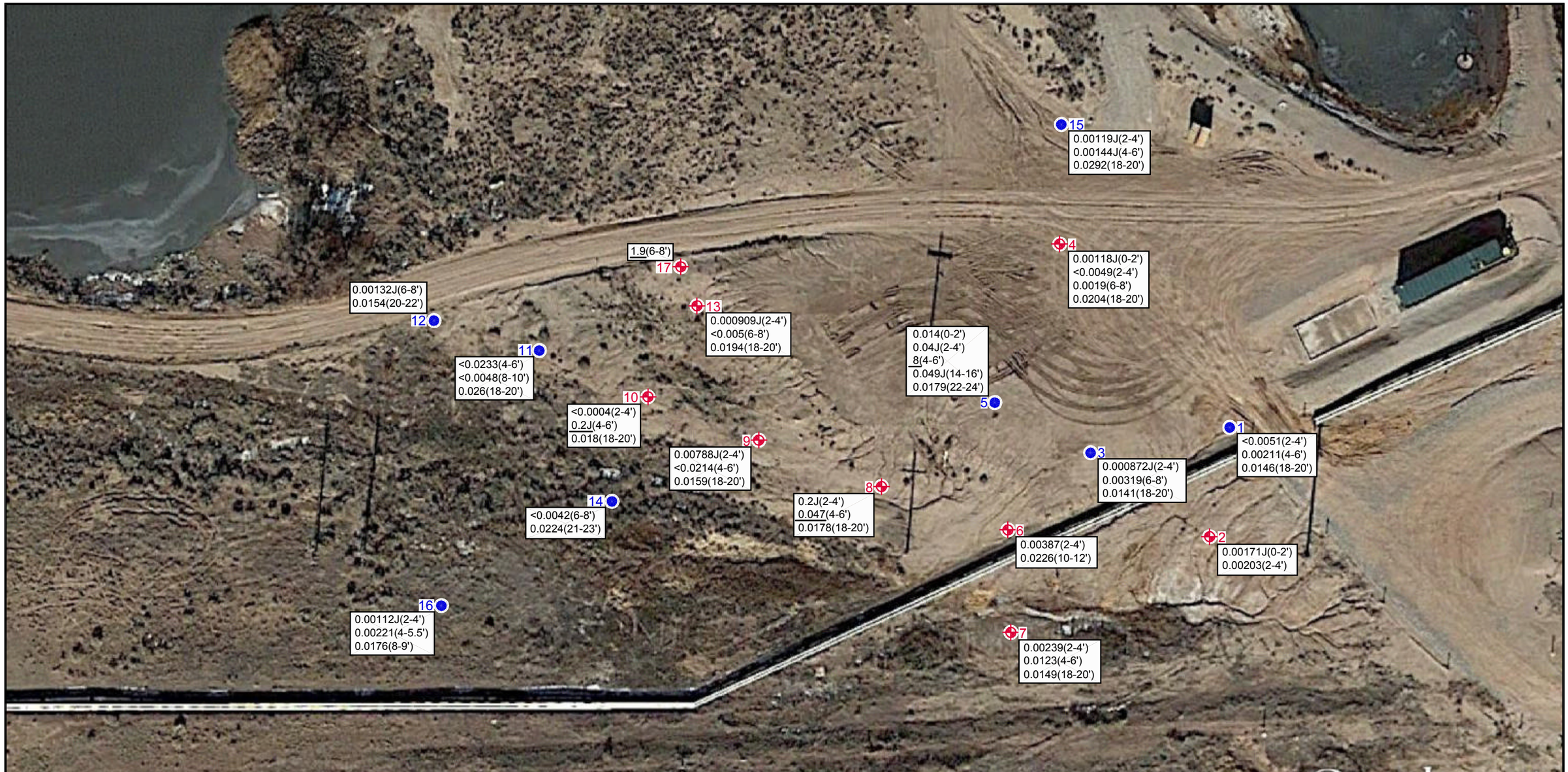

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

0.014(0-2') BENZENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

0.038 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 12/19/15 | FILE: WestRef-dB67

FIGURE 22
BENZENE
SOILS CONCENTRATION MAP
SWMU No. 10

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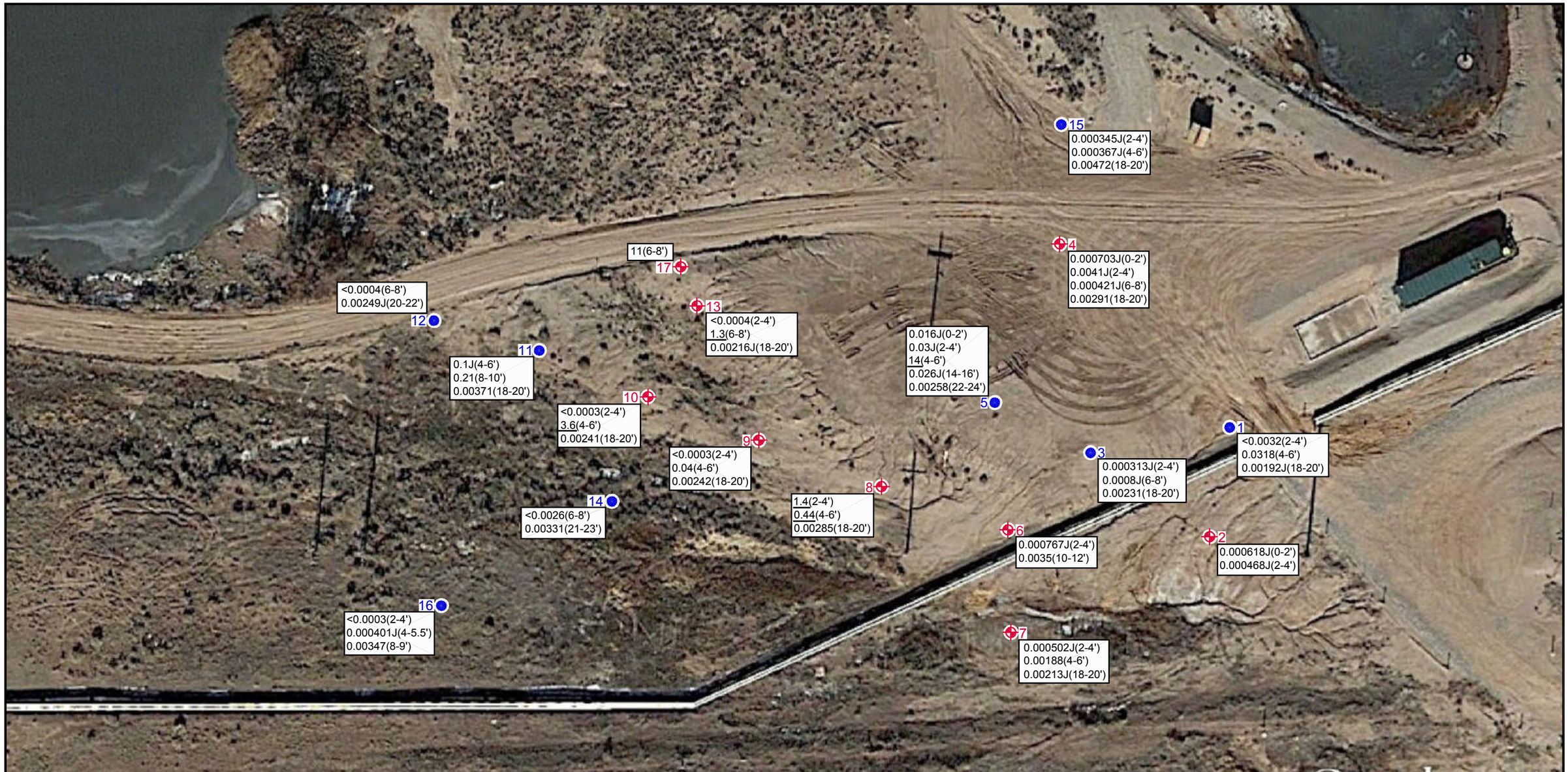

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
1.4(2-4')	ETHYLBENZENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
0.262	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 12/19/15	FILE: WestRef-dB68

FIGURE 23
ETHYLBENZENE
SOILS CONCENTRATION MAP
SWMU No. 10

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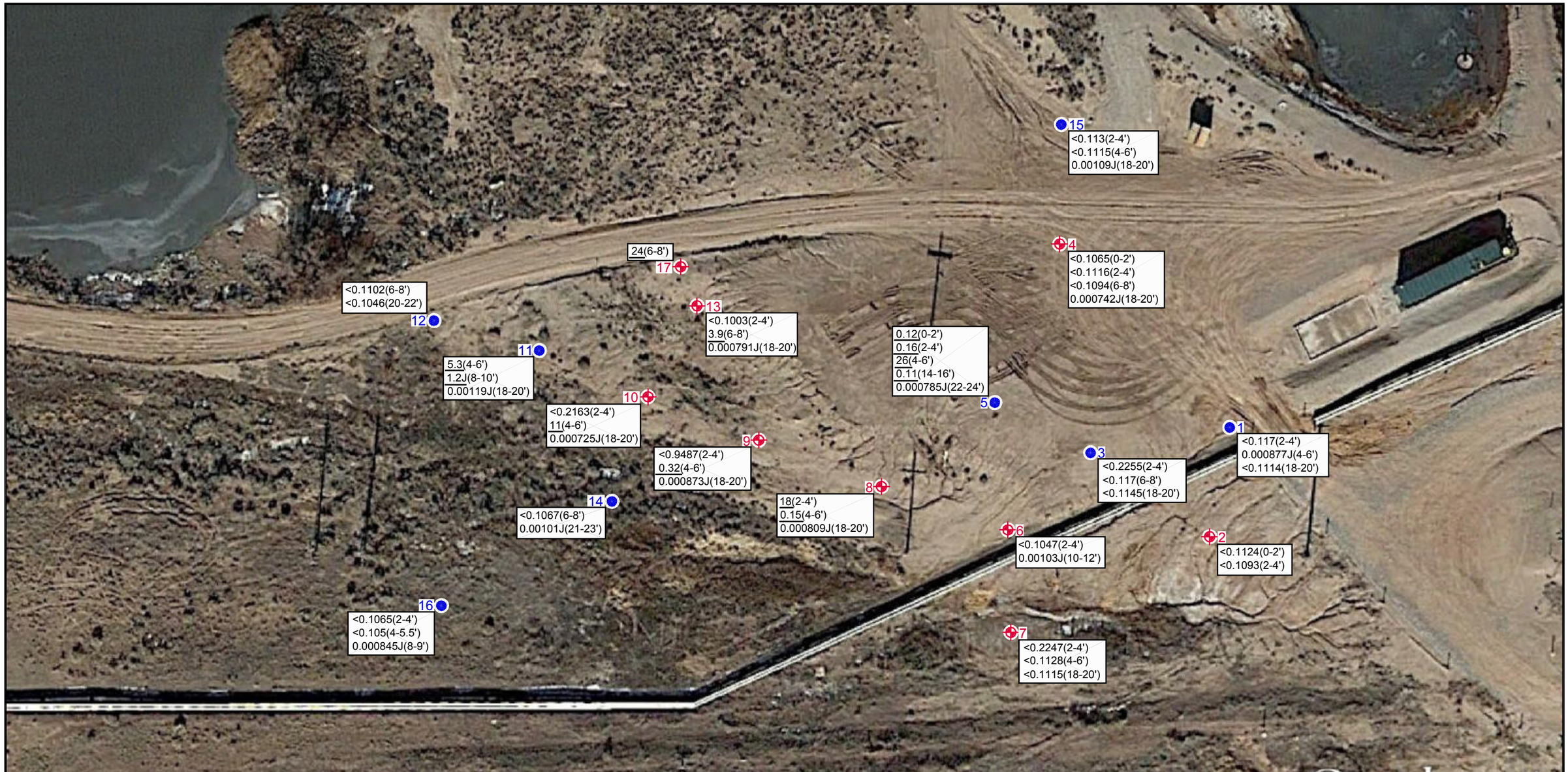

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

0.12(0-2') NAPHTHALENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

0.0823 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 12/19/15 | FILE: WestRef-dB69

FIGURE 24
NAPHTHALENE
SOILS CONCENTRATION MAP
SWMU No. 10

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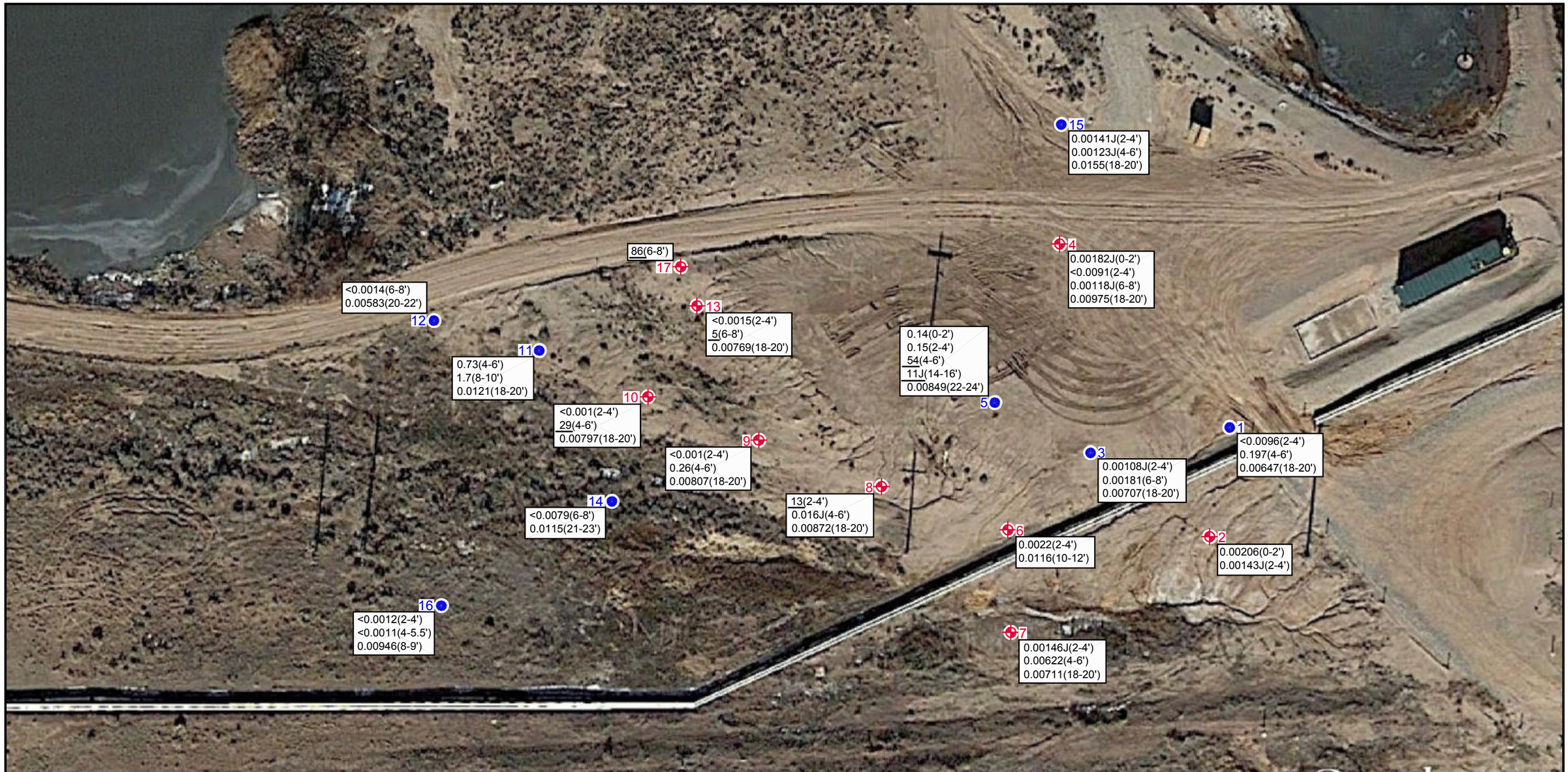

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
0.14(0-2')	XYLENES CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
2.98	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 12/27/15 | FILE: WestRef-dB72

FIGURE 25
XYLENES
SOILS CONCENTRATION MAP
SWMU No. 10

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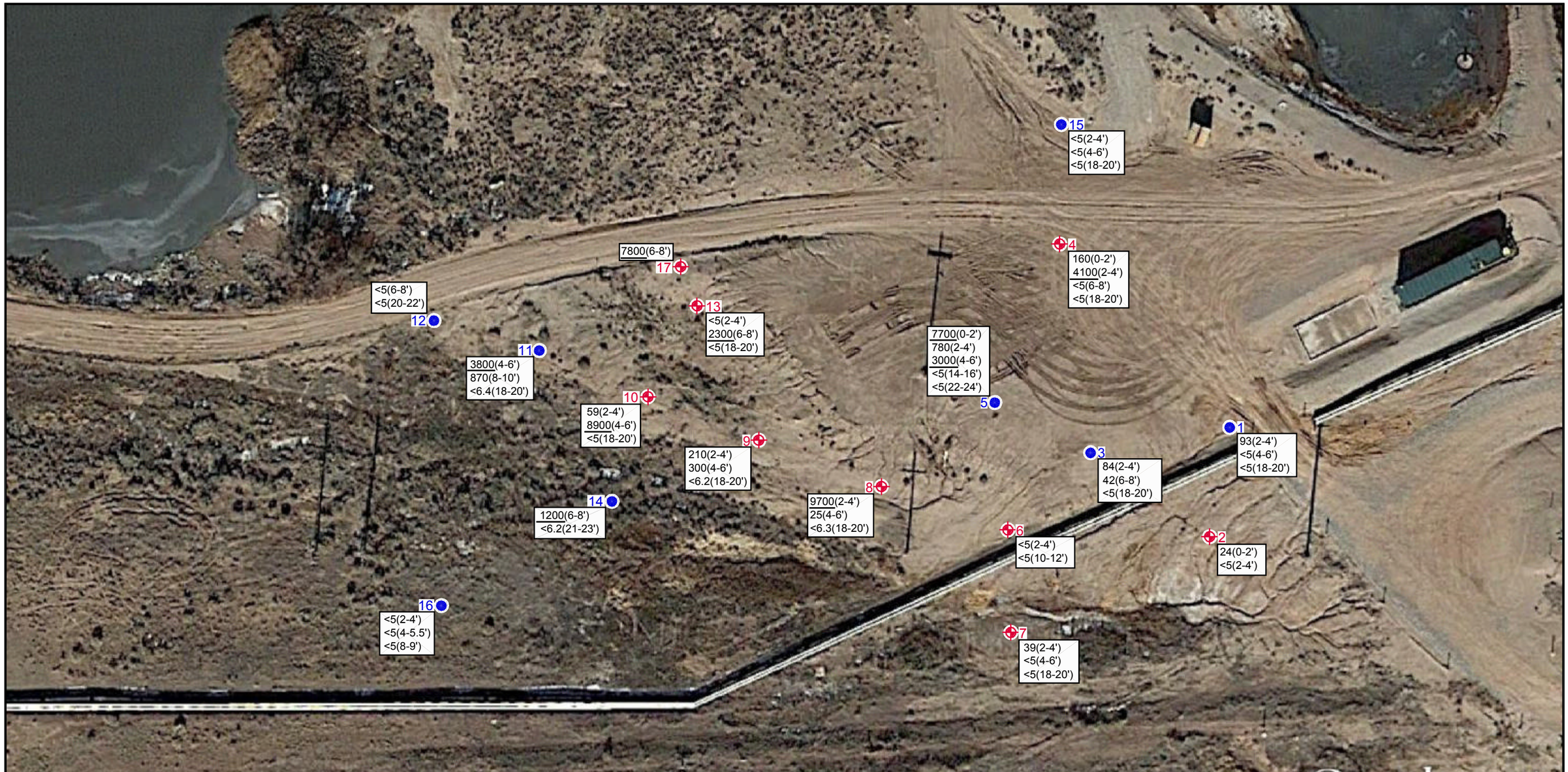

Aerial Map Source: Google Map, 01/05/2014.

0 40
SCALE IN FEET

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

160(0-2') DIESEL RANGE ORGANICS CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

1,000 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 12/27/15 | FILE: WestRef-dB73

FIGURE 26
DIESEL RANGE ORGANICS
SOILS CONCENTRATION MAP
SWMU No. 10

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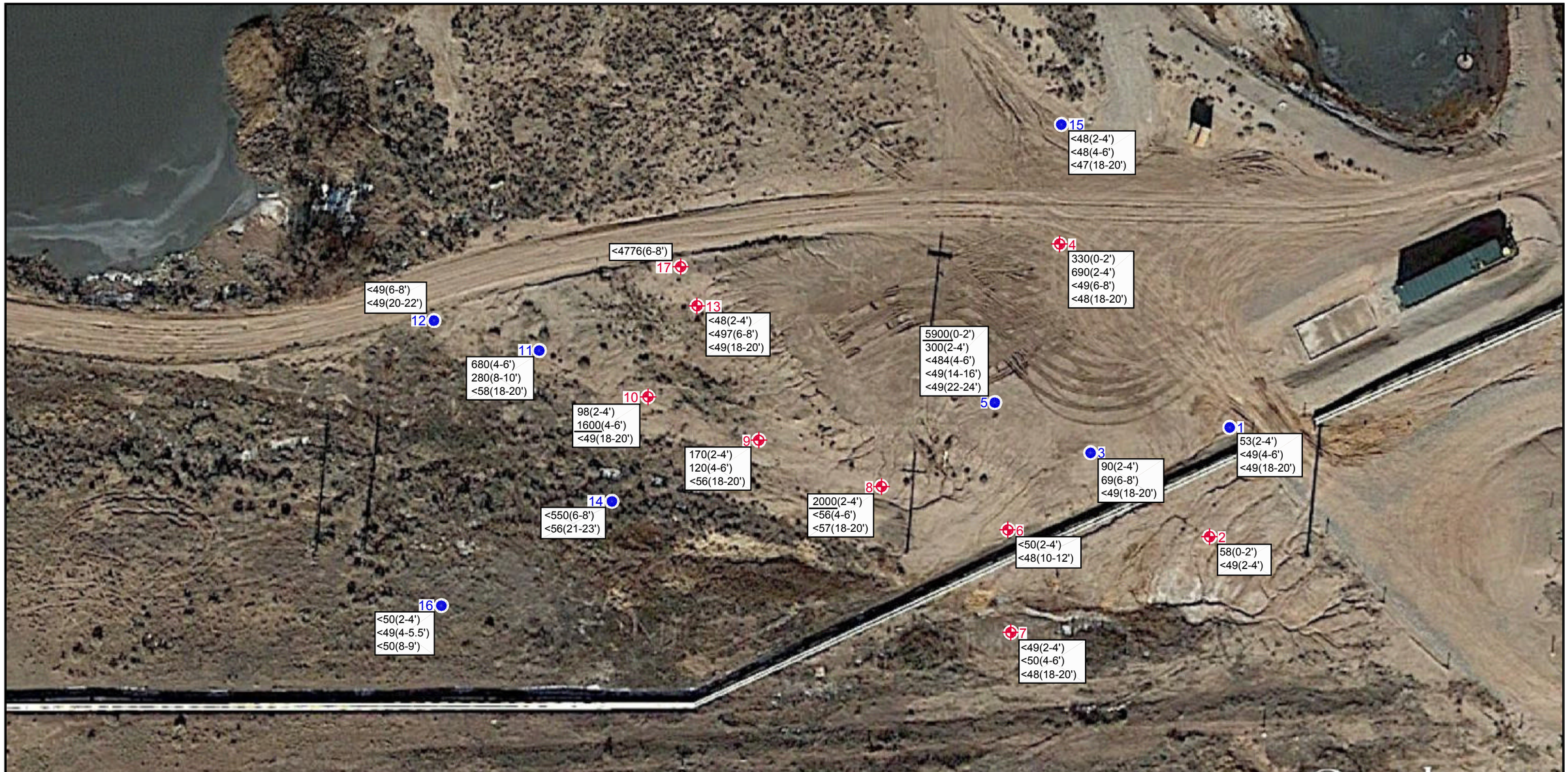

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

330(0-2') MOTOR OIL RANGE ORGANICS CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)

1,000 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 12/27/15	FILE: WestRef-dB74

FIGURE 27
MOTOR OIL RANGE ORGANICS
SOILS CONCENTRATION MAP
SWMU No. 10

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

LEGEND

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

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/12/16	FILE: WestRef-dB80

FIGURE 28
ARSENIC
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
2.6 / 0.012	DISSOLVED IRON CONCENTRATION, mg/l DISSOLVED NICKEL CONCENTRATION, mg/l
1.0	IRON - UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
0.372	NICKEL - UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 02/16/16 | FILE: WestRef-dB89

FIGURE 29
IRON & NICKEL
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
0.91	MANGANESE (DISSLOVED) CONCENTRATION, mg/l
0.2	UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
*	NOT SUFFICIENT WATER VOLUME FOR ANALYSIS

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/12/16	FILE: WestRef-dB81

FIGURE 30
MANGANESE (DISSOLVED)
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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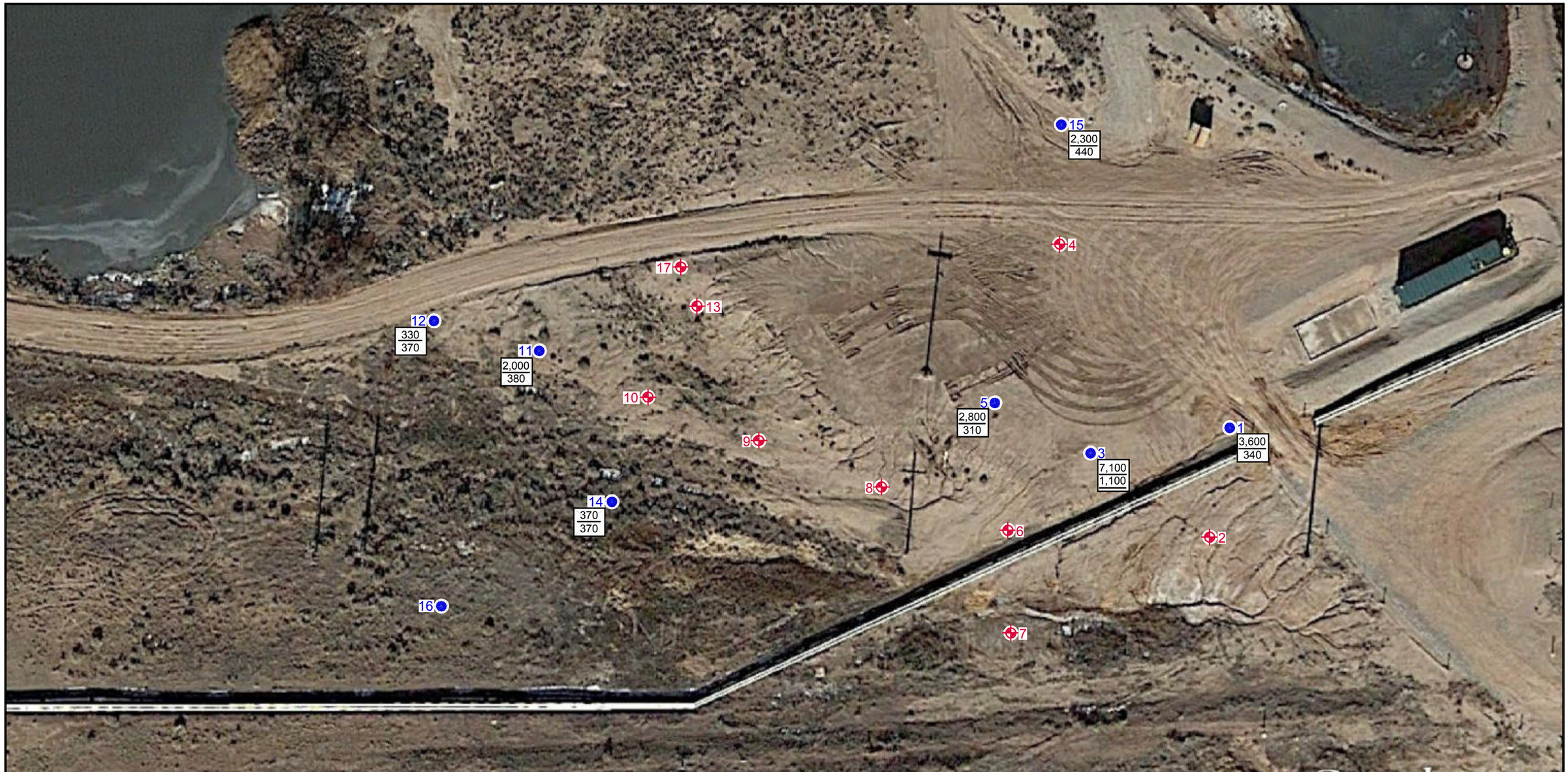

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

2	SOIL BORING LOCATION AND IDENTIFICATION NUMBER
1	SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
330 / 370	CHLORIDE CONCENTRATION, mg/l SULFATE CONCENTRATION, mg/l
250	CHLORIDE - UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
600	SULFATE - UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/16/16	FILE: WestRef-dB90

FIGURE 31
CHLORIDE & SULFATE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

0.44 1,2,4-TRIMETHYLBENZENE CONCENTRATION, µg/l

15.0 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/12/16	FILE: WestRef-dB82

FIGURE 32
1,2,4-TRIMETHYLBENZENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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

0 40
SCALE IN FEET

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

3.9 1,3,5-TRIMETHYLBENZENE CONCENTRATION, µg/l

12 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/12/16	FILE: WestRef-dB83

FIGURE 33
1,3,5-TRIMETHYLBENZENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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Austin, Texas 78759

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

LEGEND

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

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 02/12/16 | FILE: WestRef-dB84

FIGURE 34
1-METHYLNAPHTHALENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

3.8 2-METHYLNAPHTHALENE CONCENTRATION, µg/l

36 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/12/16	FILE: WestRef-dB85

FIGURE 35
2-METHYLNAPHTHALENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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

LEGEND

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

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/12/16	FILE: WestRef-dB86

FIGURE 36
BENZENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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

LEGEND

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

N

0 40
SCALE IN FEET

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/12/16	FILE: WestRef-dB87

FIGURE 37
MTBE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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

LEGEND

2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER

1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER

45 NAPHTHALENE CONCENTRATION, $\mu g/l$

1.65 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

0 40
SCALE IN FEET

NEW MEXICO

GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 02/12/16	FILE: WestRef-dB88

FIGURE 38
NAPHTHALENE
GROUNDWATER CONCENTRATION MAP
SWMU No. 10

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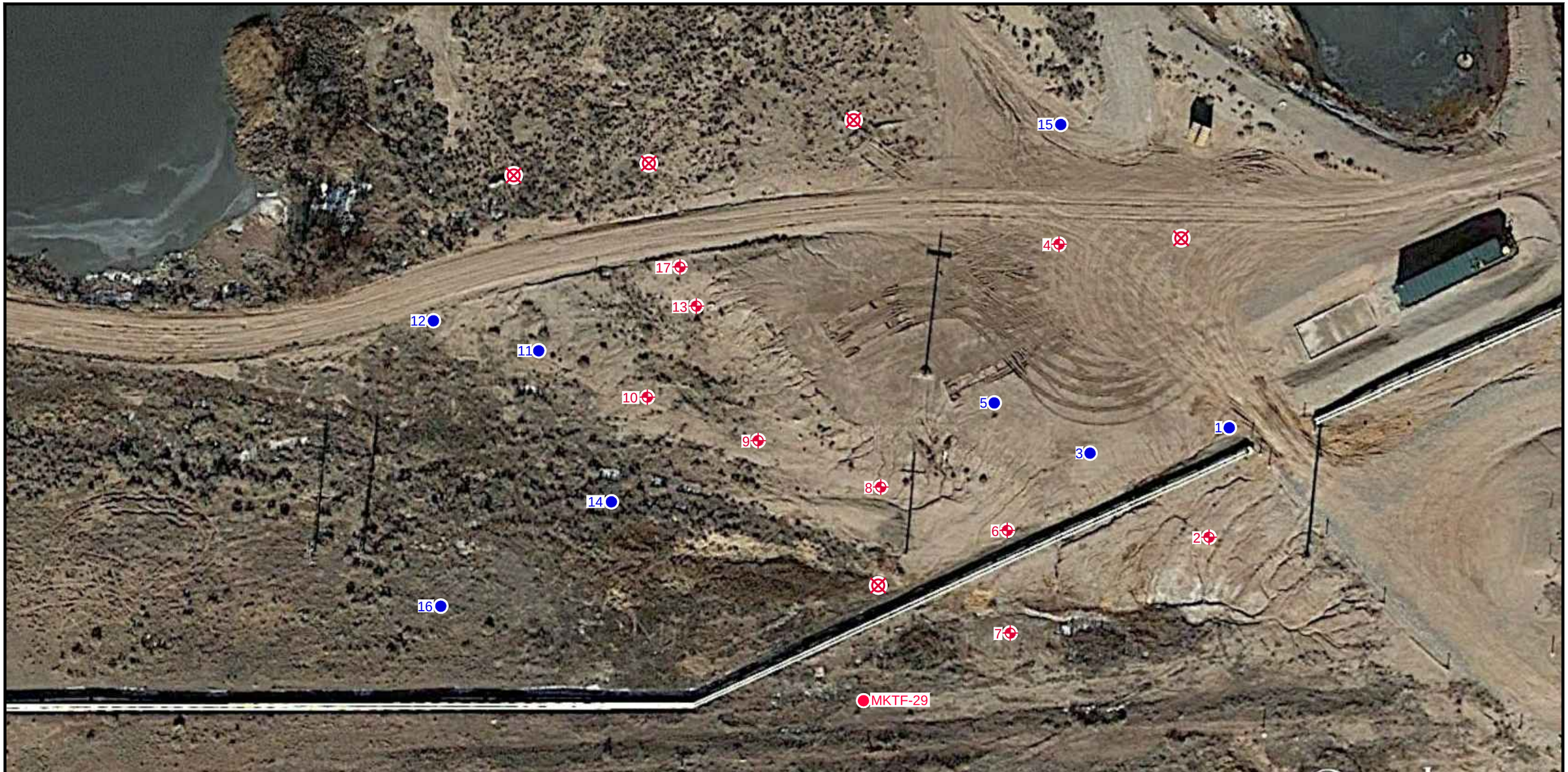

Aerial Map Source: Google Map, 01/05/2014.

LEGEND

- PROPOSED ADDITIONAL SOIL BORING LOCATION AND IDENTIFICATION NUMBER
- 2 SOIL BORING LOCATION AND IDENTIFICATION NUMBER
- 1 SOIL BORING / TEMPORARY WELL LOCATION AND IDENTIFICATION NUMBER
- MKTF-29 MONITORING WELL LOCATION (PERMANENT WELL) AND IDENTIFICATION NUMBER

0 40
SCALE IN FEET

NEW MEXICO
GALLUP SITE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining | DATE: 02/23/16 | FILE: WestRef-dB98

FIGURE 39
PROPOSED SOIL BORING MAP
SWMU No. 10

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Appendix A

Hydrogeologic Data

TEST PUMPING OF CHINLE SHALE

METHODOLOGY AND DESCRIPTION OF THE TEST

The test consisted of a 5 hour pumping period and a 2 hour recovery period. An air-driven piston pump capable of sustaining pumping rates as low as 10 gallons/hour (0.167 gpm) was used for the test. Water level measurments were taken with an electronic sounder. The well (OW-24) is located approximately 250 feet northwest of the land treatment facility and is completed within the Chinle shale. The lithologic and completion log of the well is attached (Figure F-2).

Pumping began at 1515 hours on February 20, 1985 at a rate of 10 gallons/hour. The produced water was very turbid. Clogging of the pump and pump lines necessitated continuous monitoring and adjustment of the discharge.

After 4 hours of pumping at 10 gallons/hour, the drawdown of the well appeared to stabilize at about 7 feet. The discharge rate was increased to 20 gallons/hour in order to more effectively stress the aquitard. After one hour of additional pumping a total drawdown of 12 feet was observed. However, this higher pumping rate increased the turbidity of the discharge and caused instability of the pumping rate. The lack of control of the discharge rate and the potential of diamage to the pump forced the termination of the test after a total of 5 hours of pumping.

Water level recovery was observed for 100 minutes. At this time the water level had recovered to within 90% of the pre-pumping level.

TABLE F-1

Pump Test Data, OW-24

PUMP TEST ANALYSIS

Field measurements are summarized in Table F-1. Due to the short pumping time and potential well-bore and gravel-pack effects, the final analysis was based on methods developed by Shafer, for low-conductivity materials.

Partial penetration effects were neglected in the analysis because the low pumping rates and the expected anisotropy of the aquitard would prevent significant vertical flow to the well bore. The low pumping rate was also designed to completely drain the gravel pack in the well to insure accurate recovery data.

A copy of Shafer's methodology is attached, and the data for his analysis is given in Table F-2. Figure F-1 is a plot of the recovery data, according to Shafer's methods. This Figure includes calculation of T and K for the Chinle shales.

TD = 58'-4" = 58.33'
DW = 31.76
Pump @ 55 26.37' of water
≈ 18 gal

PUMPING DATA

DATA SHEET FOR RECORDING PUMP TEST DATA

County: McKinley Co.
Location: Ciniza Refinery 2/22/85

Observation well no. _____
Pumped well no. OW-24

Average Q _____ gpm r = _____ ft. r^2 = _____

Date	Hour	t (min)	t' (min)	t/t'	Depth to water	s (unadjusted)	Adjustment Δs	s' (adjusted)	Q (gpm)	Remarks
2-20	1515	0			31'-11.5"	0 in	Feet		10 gph	STATIC LEVEL w/ PUMP
	1516	1			33-0	12.5	1.04			LARGE INITIAL DRAW DOWN FILL HOSE
	1517	2			33-1	13.5	1.13			Setting pump rate
	1518	3			33-4	16.5	1.38			
	1519	4			33-8¾	20.75	1.73			
	1520	5			33-11½	24.0	2.0'			
	1521	6			34-2	26.5	2.22			
	1522	7			34-2½	27.0	2.25			
1 min	1523	8			34-3	27.5	2.27			
	1524	9			34-4	28.5	2.37			
	1525	10			34-5	29.5	2.46			
	1527	12			34-6¾	30.75	2.56			
	1529	14			34-9	33.5	2.79			
	1531	16			35-0	36.5"	3.04			
2 min	1533	18			35.2¾	38.75	3.23			
	1535	20			35-4½	41.0	3.42			
	1540	25			35-10½	47.0	3.92			
	1545	30			36-3	51.5	4.28			
	1550	35			36-2½	51.0	4.25			
	1555	40			36-8	56.5	4.71		10 gph	CLEARED PUMP Valve
5 min	1600	45			37-2¾	62.75	5.23			
	1605	50			36-10½	61.0	5.08			clear pump valve
	1610	55			NR					
	1615	60			37-10¼	~~88.75~~ 70.75	5.90			Pumped 10 gal
10 min	1625	70			38'-½	85.0 73.0	6.08			

PUMPING DATA

DATA SHEET FOR RECORDING PUMP TEST DATA

County: _____ Observation well no. MW-24

Location: Cimarron Refinery Pumped well no. MW-24

Average Q 10 gpm r = — ft. r^2 = —

Date	Hour	t (min)	t' (min)	t/t'	Depth to water	s'' (unadjusted)	Adjustment Δs	s' (adjusted)	Q gpm	Remarks
5-20	1635	80			39-3½	~~80.0~~ 78	6.33		10	
	1645	90			38-7	~~91.5~~ 79.5	6.79			Lift pump to 50'
	1655	100			37-6½	69.0	5.75			clear pump, ready pressure
	1705	110			38-11½	~~94.0~~ 84.0	7.00			
2 hours	1715	120			39-2½		7.27			Pumped 20 gal
	1730	135			38-11		6.97			
15 min	1745	150			39-2½		7.25			
	1800	165			39-0½		7.08			
3 h	1815	180			39-2		7.21			Pumped 30 gal
	1830	195			39-5		7.46			
	1845	210			39-5		7.46			
	1900	225			39-2		7.21			
4 h	1915	240			38-11½		7.00			Pumped 40 gal
	1930	255			39-0		7.04		10	
	1932	257			39-4		7.38		20	INCREASE PUMP RATE TO 30 GPM
	1934	259			39-10		7.87			PUMP SLIPPED APPROX 1 FOOT - REPLACED TO APPROX SAME LEVEL
2 min	1936	261			40-3½		8.33			
	1938	263			40-3½		8.33			
	1940	265			40-1½		8.17			PUMPING RATE TELL-OFF SLIGHTLY
	1945	270			40-9		8.79			
	1950	275			41-9½		9.83			
5 min	1955	280			42-0		10.04			
	~~2000~~	285			41-8		9.72			
	2005	290			42-6½		9.75			
	2010	295			43-4		11.27			Silt in Pump
	2015	300			43-2½		11.25			Adj pump valve
15 min 5 h	2030	315			43-10½		11.92			pumped 10 gal

RECOVERY DATA

DATA SHEET FOR RECORDING PUMP TEST DATA

County: _____ Observation well no. _____

Location: Cimiy Refining Purged well no. [illegible]-24

Average Q _____ gpm r = _____ ft. r^2 = _____

	Date	Hour	t (min)	t' (min)	t/t'	Depth to water	s (unadjusted)	Adjustment Δs	s' (adjusted)	Q (gpm)	Remarks
	1/22	20:32		0		43-11½	144"	12.0'	0	20 gph	
		2034		2		42-7-		10.63'	1.37		
		2036		4		41-8¾		9.69	2.31		
2 min		2038		6		40-10¼		8.86	3.14		
		2040		8		40-2		8.21	3.79		
		2042		10		39-6¼		7.56	4.44		
		2047		15		38-5¾		6.11	5.89		
		2052		20		37-1½		5.17	6.83		
		2057		25		36-4-		4.38	7.62		
		2102		30		35-8½		3.75	8.25		
		2107		35		35-2¼		3.27	8.73		
		2112		40		34-9¾		2.86	9.14		
5 min		2117		45		34-5¾		2.52	9.48		
		2122		50		34-3¾		2.27	9.73		
		2127		55		34-0½		2.07	9.93		
		2132		60		33-10½		1.92	10.08		
		2142		70		33-7½		1.66	10.34		
10 min		2152		80		33-5¾		1.51	10.49		
		2202		90		33-4½		1.42	10.58		
		2212		100		33-3¼		1.32	10.68		
		2222		110							
		2232		120							
15 min		2247		135							
		2302		150							
		2317		165							

TABLE F-2

DATA FOR SHAFER'S METHOD

Time Since Pumping Started (min)	Drawdown (feet) (s)	Feet of Casing Filled (ft)	Time To Fill (min)	Q (gpm)	S/Q (ft/gpm)
317	12.0	0	0	---	----
319	10.63	1.37	2	.45	23.8
321	9.69	.94	2	.31	31.6
323	8.86	.83	2	.27	32.7
325	8.21	.65	2	.21	38.7
327	7.56	.65	2	.21	35.6
332	6.11	1.45	5	.19	32.3
337	5.17	.94	5	.13	42.1
342	4.38	.79	5	.10	42.5
347	3.75	.63	5	.08	45.6
352	3.27	.48	5	.06	52.2
357	2.86	.41	5	.05	53.4
362	2.52	.34	5	.04	56.8
367	2.27	.25	5	.03	69.5
372	2.07	.20	5	.026	79.3
377	1.92	.15	5	.019	98.0
387	1.66	.26	10	.017	97.8
397	1.51	.15	10	.009	154
407	1.42	.15	10	.009	145
417	1.32	.10	10	.006	202

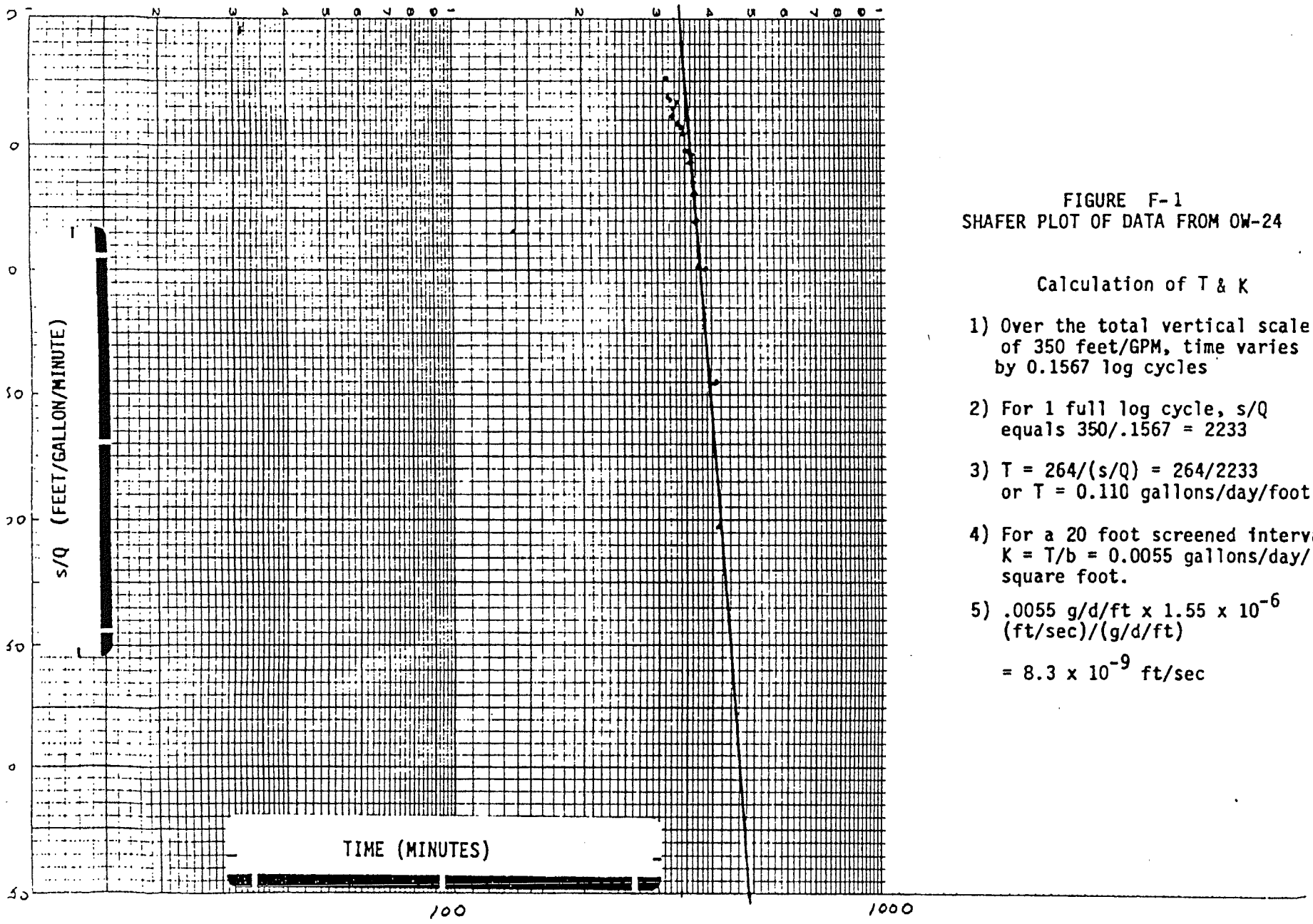


FIGURE F-1
SHAFER PLOT OF DATA FROM OW-24

Calculation of T & K

1) Over the total vertical scale of 350 feet/GPM, time varies by 0.1567 log cycles

2) For 1 full log cycle, s/Q equals 350/.1567 = 2233

3) T = 264/(s/Q) = 264/2233 or T = 0.110 gallons/day/foot

4) For a 20 foot screened interval K = T/b = 0.0055 gallons/day/square foot.

5) .0055 g/d/ft x 1.55×10^{-6} (ft/sec)/(g/d/ft)

= 8.3×10^{-9} ft/sec

BO..G OW-24

SURFACE ELEVATION: 6676 FEET

DEPTH IN FEET	TESTS REPORTED ELSEWHERE	ATTERBERG LIMITS: LIQUID LIMIT (%)	ATTERBERG LIMITS: PLASTICITY INDEX (%)	STRENGTH TEST DATA: TYPE OF TEST	STRENGTH TEST DATA: NORMAL OR CONFINING PRESSURE (PSF)	STRENGTH TEST DATA: SHEAR STRENGTH (PSF)	STRENGTH TEST DATA: DEVIATOR STRESS (PSF)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)
0									
10									
20									
30									
40									
50									
60									
70									
80									
90									
100									
110									
120									
130									
140									
150									
160									

PENETRATION RATE MINUTES/FOOT

SYMBOLS

DESCRIPTION

2.4, 2.0, 2.0, 1.6, 2.0, 1.8, 2.3, 1.8, 2.3, 3.5, 3.3, 4.0, 3.7, 4.0, 2.0, 3.0, 2.3, 2.4

CL

TRIASSIC PERIOD

CHINLE FORMATION
REDDISH BROWN, VERY FINE SANDY CLAY, SOFT, HIGHLY WEATHERED

SHALE

30 FEET: SHALE, REDDISH BROWN, SANDY, SOFT, FRESH

BORING COMPLETED AT 65.0 FEET ON 1/2/81.
4-INCH PVC PIEZOMETER INSTALLED WITH PERFORATIONS FROM 41.0 TO 61.0 FEET.
GRAVEL PLACED FROM 28.0 TO 61.0 FEET AND BORING SEALED WITH BENTONITE AND CEMENT TO SURFACE.
GROUND WATER LEVEL MEASURED AT 32.5 FEET BELOW GROUND ON 1/5/81.

FIGURE F-2
LOG OF WELL OW-24

LOG OF BORINGS

DAMES & MOORE

Pumping Test Analyses for Low Yield Formations

by David C. Shafer

William F. Achuff
Director

Occasionally it is necessary to determine aquifer characteristics of very low yielding formations—those with transmissivities less than 500 gallons per day per foot. Though interest in these aquifers is certainly not because of their productive capability, it may be desirable to determine groundwater flow characteristics even in these low yield formations in order to determine such things as regional groundwater flow patterns, effect of dewatering or migration of pollution plumes near point sources of contamination.

Different Approach

Conventional pumping test analysis using the standard time drawdown graph often does not work effectively in low T (transmissivity) formations for two reasons. First, the pumped well's low specific capacity (gallons per minute per foot of drawdown) may cause the pump to break suction during the test and it may be impractical to throttle back the pumping rate sufficiently to prevent this. Second, even if a constant pumping rate can be maintained without breaking suction, most of the data obtained will probably reflect casing storage effects rather than true aquifer parameters (see "Casing Storage Can Affect Pumping Test Data," Jan-Feb. 1978, Johnson Drillers Journal). Thus a different approach is required.

The best method for analyzing these formations is to pump a substantial portion of the casing empty, then shut the pump off and measure water levels as they recover. In ordinary pumping tests these measurements correspond to the non-pumping portion of the test. However, in the low T formations this "recovery period" is actually the "pumping period!"

After pump shut-off, the casing slowly begins filling with water. This water comes from the aquifer and actually represents the water pumped during this so called "pumping period." The pumping rate is determined by measuring the volume of

Pumping rate = 10 gpm
Pumping period = 15 minutes
Drawdown at pump shut off = 90 ft
Casing — 6" I.D.
Drop pipe — 1¼" I.D.

Time in minutes since pumping started (t)	Drawdown in feet (s)	Number of feet of casing filled	Time in minutes required to fill	Volume filled divided by time required in gallons per minute (Q)	s/Q in feet per gallon per minute
15 (pump shut off)	90				
17	85.66	4.34	2	3.04	28.2
20	79.7	5.96	3	2.78	28.6
30	64.2	15.5	10	2.17	29.5
40	51.9	12.3	10	1.72	30.2
60	35.6	13.3	20	1.14	31.1
80	24.6	11.0	20	.77	31.8

Table 1

casing filled in a given length of time.

During the test, careful measurements are made of time since pumping began (t) along with drawdown (s) at each of these times. Then a calculation is made to determine Q for each time t and finally the ratio s/Q is computed for each measured drawdown value. The ratio is simply the reciprocal of the specific capacity.

A graph is then constructed showing t versus the ratio s/Q plotted as usual on semi-logarithmic graph paper with t on the log scale. A straight line of best fit is drawn through the data points and T is calculated as follows:

$$T = \frac{264}{\Delta(s/Q)}$$

where $\Delta(s/Q)$ is the change in s/Q over one log cycle of graph paper.

This graph has the unique advantage that it will accurately reflect aquifer transmissivity independent of casing storage effects. In addition it will be sensitive to nearby recharge and/or negative boundaries and will reveal these conditions like any ordinary time drawdown graph.

To see how this technique works it is best to work an example. Table 1 shows data obtained from a 6-inch well pumped at 10 gpm for 15 minutes. Drawdown after 15 minutes of pumping measured 90 feet.

The next data point was recorded two minutes following pump shut-off or 17 minutes since pumping started. At this time the pumping water level was 85.66 feet, indicating that 4.34 feet of casing had filled during the two minute interval.

The annulus between the 6-inch casing and 1¼" drop pipe holds 1.4 gallons per foot so that the volume of casing filled is 1.4 times 4.34, or 6.08 gallons in two minutes. Thus,

$$Q = 6.08 \text{ gallons}/2 \text{ minutes} = 3.04 \text{ gpm}$$

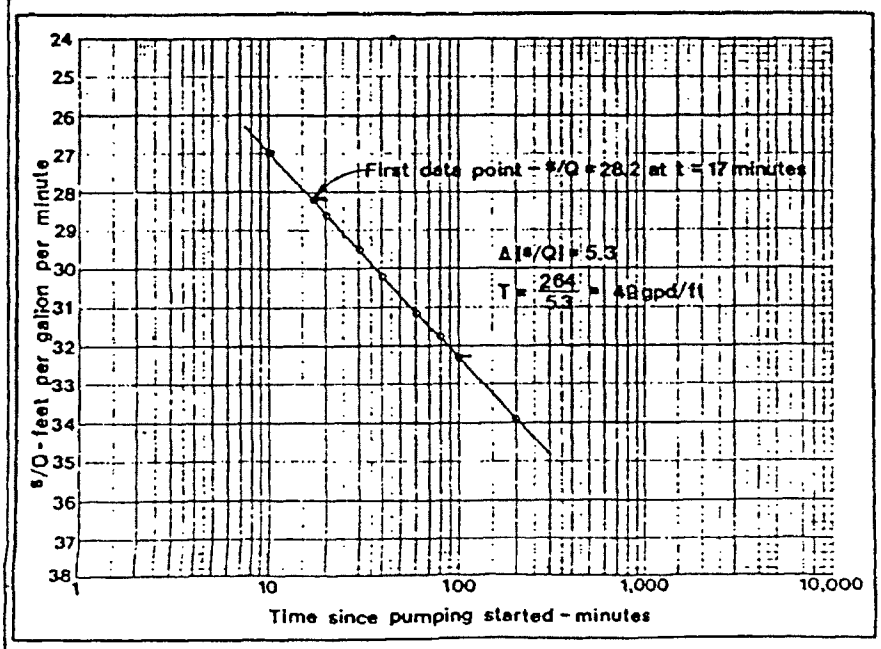
finally,

$$s/Q = 85.66 \text{ ft}/3.04 \text{ gpm} = 28.2 \text{ ft/gpm}$$

which is plotted at a time of 17 minutes on the graph shown here.

This analysis is repeated for each drawdown measurement. The resultant calculated s/Q values are shown in the table and plotted in the figure. The formation T value from the graph is

$$T = \frac{264}{\Delta(s/Q)} = 264/5.3 = 49 \text{ gpd/ft}$$



In low transmissivity situations, readings are taken after pump shut-off. In this method, s/Q is the reciprocal of the specific capacity and t is time, measured after shut-off as water begins to enter the casing.

Conventional Analysis

Examination of the hydraulic characteristics of this well (not included here) shows that if a conventional time drawdown graph had been used, casing storage effects would have lasted for approximately twelve hours. This means that data recorded in the first twelve hours of pumping would have been useless and longer pumping than this would have been required to obtain any usable data at all. However, data collected after twelve hours of pumping probably would be more influenced by boundary conditions than by aquifer transmissivity. Thus, in practice, it actually might have been impossible to determine the T value using conventional analysis techniques regardless of the length of the test. The value of the method described above becomes very clear; it may be the only way to determine T values in certain low yielding aquifers.

In order to maximize the accuracy of this method, it is best to unload (empty) the casing as rapidly as possible. Thus it is actually better to use a high capacity pump than a low capacity pump in analyzing extremely low-yielding wells!

Another good idea is to unload the casing with compressed air since this can typically be done in one minute or less.

Recorded Data Must Be Accurate

An additional important consideration is that all data recorded for this type of analysis must be absolutely accurate. Small errors in the recorded values of time and/or drawdown can result in large errors in the calculated values of s/Q. For best results, drawdown should be recorded to the nearest hundredth of a foot and timed to the nearest second or two.

JOHN W. SHOMAKER
CONSULTING GEOLOGIST
3236 CANDELARIA, N.E.
ALBUQUERQUE, NEW MEXICO 87107

(505) 884-2897

RECEIVED SEP 24 1984

September 20, 1984

Carl D. Shook, Plant Manager
Giant Refining Company, Ciniza Refinery
Route 3, Box 7
Gallup, New Mexico 87301

Re: results of permeability tests, July 2 and 3, 1984

Dear Carl:

Copies of the field notes, calculations, and data plots for the two permeability tests are attached. The tests are summarized as follows:

Well OW-4 The well is completed principally in the clay and shale sequence which overlies the uppermost aquifer; a small thickness of sandstone which may be part of the uppermost aquifer was also penetrated. Total depth when drilled was 102.0 ft. Perforations are from 62.0 ft to 102 ft. The well is located near the center of the land-treatment area. A slug test was performed on July 3, 1984, following the method described by S. W. Lohman (1972, Ground-Water Hydraulics, U. S. Geol. Survey Prof. Paper 708, p. 27-29), which indicates the permeability of the section open to the well to be about 4×10^{-7} cm/sec.

Well MW-1 This well is one of the monitoring wells on the boundary of the land-treatment area, and is completed in the uppermost aquifer. It was drilled to 120 ft, and is screened in the interval 87 to 120 ft; the casing is sealed above 89 ft so as to isolate the uppermost aquifer. The slug test performed on July 3, 1984 indicated a permeability of about 1.2×10^{-4} cm/sec.

Information as to the construction of the wells is taken from Dames and Moore (March, 1981; Ground water and soils investigation, Ciniza Refinery near Gallup, New Mexico, and November, 1981, Groundwater monitoring plan, Ciniza Refinery near Gallup, New Mexico).

Please let me know if there are questions.

Sincerely,

John W. Shomaker
Consulting Geologist

cc: Tom Andrews, Delta H Engineering w/encl

well: [illegible] OW-4
date: 7-3-84

casing size: nominal 4½" ID 4.0 csg. mat'l. PVC
water levels measured from top 4½ OD PVC casing, S side,
which is 1.7 ± above ground level.
volume of slug:

OD, ft $\left(\frac{0.27}{2} \times \frac{1}{2}\right)^2 \times \pi \times$ length, ft

OD, ft	length, ft	ft^3
0.30	0.10	0.006
0.243	0.04	0.003
0.27	4.84	0.224
0.243	0.26	0.015
0.27	4.81	0.223
0.18	0.26	0.015
0.11	0.03	0.001
	0.25	0.002
	sum	0.489 = V, ft^3 = 3.66 gal.

Note- obstruction in casing at 33. won't pass 0.27 OD.

r_c = internal radius of casing above perfs. 0.165 ft

r_s = radius of screen or open hole: _____ ft

initial water level 26.15 ft below MP, time 07:51

$$H_o = \frac{V}{\pi r_c^2} = \frac{0.489}{\pi (0.165)^2} = 5.72 \text{ ft}$$

clock time	t, sec.	water level	H	H/H_o	remarks
08:20:54	0				slug released top slug: 23.2' MP
21:25?	31?	20.75	5.40	0.944	
22:28	94	20.76	5.39	0.942	
23:14	140	20.80	5.35	0.935	
23:51	177	20.81	5.34	0.934	
24:42	228	20.83	5.32	0.930	
25:42	288	20.87	5.28	0.923	
27:06	372	20.90	5.25	0.918	
28:14	440	20.92	5.23	0.914	
29:43	529	20.95	5.20	0.909	
30:55	601	20.97	5.18	0.906	
32:46	712	21.00	5.15	0.900	
35:16	862	21.04	5.11	0.893	
38:38	1064	21.10	5.05	0.883	
43:30	1356	21.19	4.96	0.867	
46:52	1558	21.21	4.94	0.864	raised slug 0.4ft.
49:26	1712	21.25	4.90	0.857	
52:54	1920	21.30	4.85	0.848	

t_0 = 08:20:54

clock time	t, sec.	level	H	H/H₀	remarks
~~08:54:13~~		~~21.34~~			
08:56:50	2096	21.35	4.80	0.839	
09:00:16	2362	21.39	4.76	0.832	
:05:00	2646	21.45	4.70	0.822	
09:55	2941	21.50	4.65	0.813	
17:46	3412	21.60	4.55	0.795	
28:25	4051	21.71	4.44	0.776	m-scope trouble
46:00	5106	21.89	4.26	0.745	
10:02:23	6089	22.05	4.10	0.717	
14:00	6786	22.15	4.00	0.699	
10:24:26	7412	22.25	3.90	0.682	stopped test; slug almost uncovered

0:00 = 2346

late data matches: $\alpha = 10^{-1}$ curve, $Tt/r_c^2 = 1$ at $t = 50{,}000$ sec.

$$T = \frac{1.0\, r_c^2}{t} = \frac{(1.0)(0.165)^2}{50{,}000} = 5.4 \times 10^{-7}\ ft^2/sec$$

$$= 0.05\ ft^2/day = 0.35\ gpd/ft$$

$$K_h = \frac{0.05\ ft^2/day}{40\ ft\ screen} = 0.001\ ft/day$$

$$0.001\ ft/day \times 30.5\ cm/ft \times \frac{1}{60 \times 1440\ sec/day} = 4 \times 10^{-7}\ cm/sec$$

$$S = \frac{r_c^2}{r_s^2}\alpha \approx \frac{0.027}{0.080} 10^{-1} = 0.03 \therefore \text{water-table storage}$$

6¾" hole!

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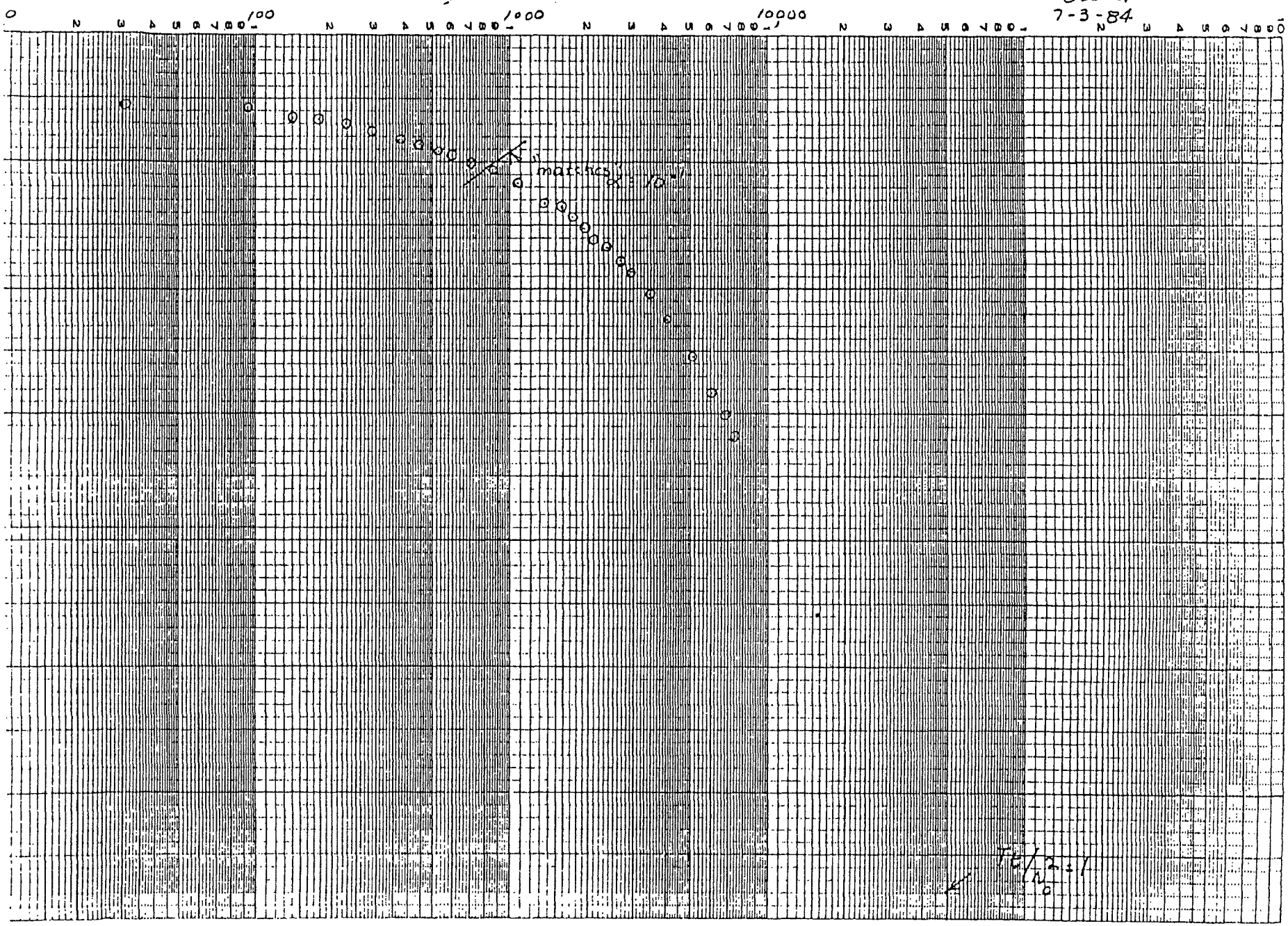

date: 7-2-84

casing size: nominal 5 1/2" OD, ID 5.1" csg. matl. PVC
water levels measured from top PVC casing, SW side
which is 1.37 ft above ground level, (concrete slab)

2.05
.68
1.37

volume of slug:

cap OD, ft $\left(\frac{0.37}{0.39} \times \frac{1}{2}\right)^2 \times \pi \times$ length, ft

0.10	=	0.011 ft^3
0.05		0.006
4.81		0.411
0.28		0.032
0.04		0.003
0.04		0.006
0.03		0.002
0.03		0.001
0.25		0.002

sum 0.474 = V, ft^3 = 3.55 gal

r_c = internal radius of casing above perfs: 0.211 ft

r_s = radius of screen or open hole: _____ ft

initial water level 5.72 ft below MP, time 13:32

$$H_o = \frac{V}{\pi r_c^2} = \frac{0.474}{\pi (0.211)^2} = 3.389 \text{ ft}$$

clock time	t, sec.	water level	H	H/H_o	remarks
13:48:00	0				slug released
13:48:20	20	2.30 ft ?	3.42	1.009	??
49:00	60	2.36	3.36	0.991	
49:26	86	2.42	3.30	0.974	
49:52	112	2.44	3.28	0.968	
50:32	152	2.50	3.22	0.950	
51:05	185	2.56	3.16	0.932	
51:42	222	2.60	3.12	0.921	
52:19	259	2.65	3.07	0.906	
52:55	295	2.70	3.02	0.891	
53:33	333	2.74	2.98	0.879	
54:26	386	2.80	2.92	0.862	
55:30	450	2.86	2.86	0.844	
57:05	545	2.97	2.75	0.811	
59:12	672	3.10	2.62	0.773	
14:01:05	785	3.20	2.52	0.744	
02:26	868	3.28	2.44	0.720	
03:52	952	3.36	2.36	0.696	

clock time	t, sec.	level	H	H/H_o	remarks
14:05:38	1058	3.45	2.27	0.670	
07:22	1162	3.54	2.18	0.643	
09:16	1276	3.62	2.10	0.620	
11:01	1381	3.69	2.03	0.599	
13:17	1517	3.79	1.93	0.569	
15:59	1679	3.89	1.83	0.540	
18:14	1814	3.97	1.75	0.516	
20:40	1960	4.07	1.65	0.487	
23:15	2115	4.15	1.57	0.463	
25:44	2264	4.22	1.50	0.443	
28:45	2445	4.31	1.41	0.416	
33:09	2709	4.43	1.29	0.381	
36:51	2931	4.52	1.20	0.354	
41:56	3236	4.64	1.08	0.319	
46:19	3499	4.71	1.01	0.298	
50:03	3723	4.78	0.94	0.277	
57:39	4179	4.90	0.82	0.242	
15:05:36	4356	5.01	0.71	0.210	
14:12	5172	5.12	0.60	0.177	
21:12	5592	5.18	0.54	0.159	
33:01	6301	5.28	0.44	0.130	
44:35	6995	5.36	0.36	0.106	
53:43	7543	5.40	0.32	0.094	
16:08:22	8422	5.46	0.26	0.077	
26:59	9539	5.52	0.20	0.059	
47:10	10,750.	5.56	0.16	0.047	
17:00:20	11,540	5.58	0.14	0.041	

late data matches: $\alpha = 10^{-5}$ curve, $Tt/r_c^2 = 1$ at $t = 830$ sec.

$$T = \frac{1.0\, r_c^2}{t} = \frac{(1.0)(0.21)^2}{830} = 5.36 \times 10^{-5}\ ft^2/sec$$

$$= 4.63\ ft^2/day = 35\ gpd/ft$$

$$K_h = \frac{4.63\ ft^2/day}{13.3\ ft\ screened} = 0.35\ ft/day$$

$$0.35\ ft/day \times 30.5\ cm/ft \times \frac{1}{60 \times 1440\ sec/day} = 1.2 \times 10^{-4}\ cm/sec$$

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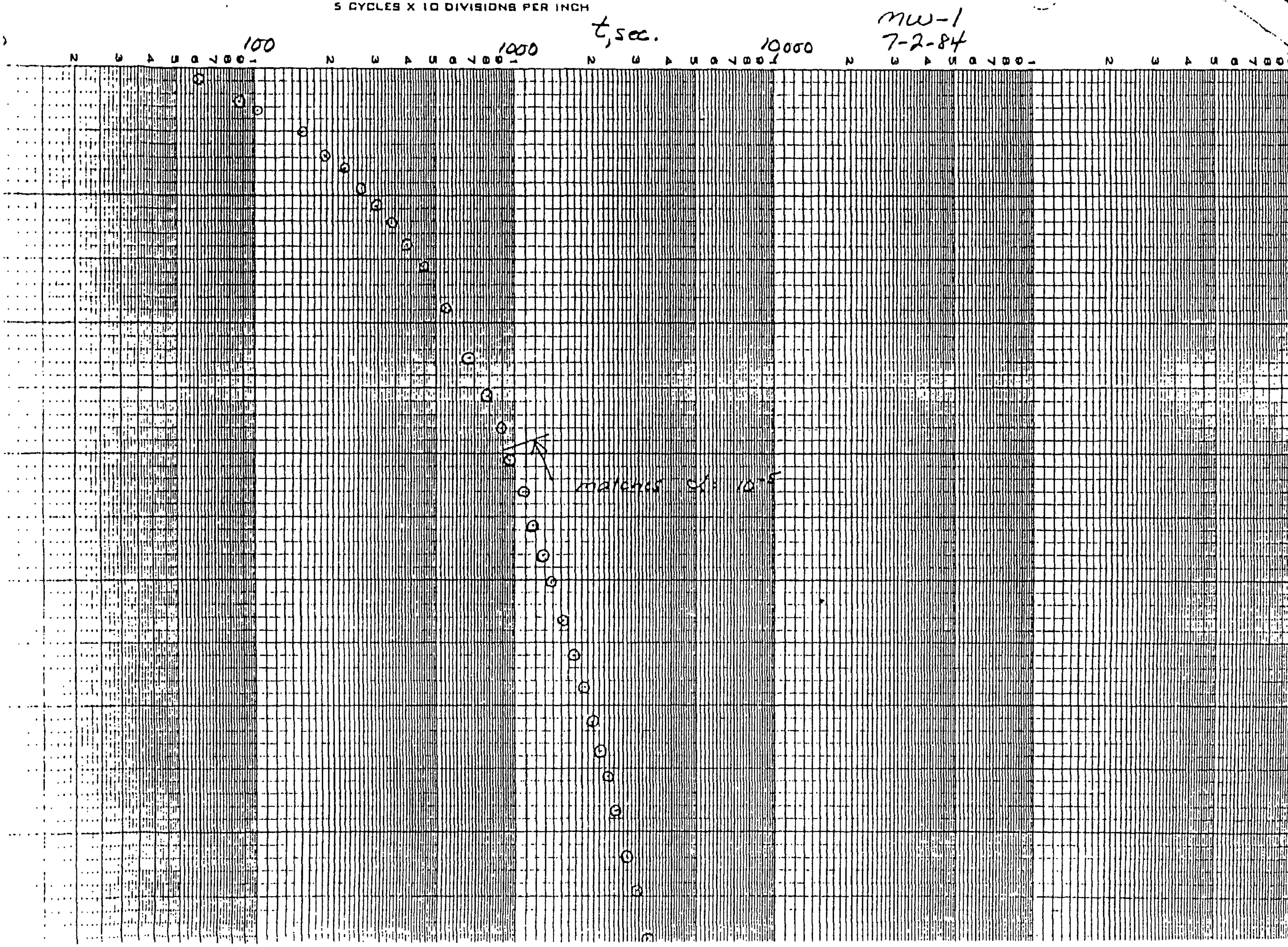
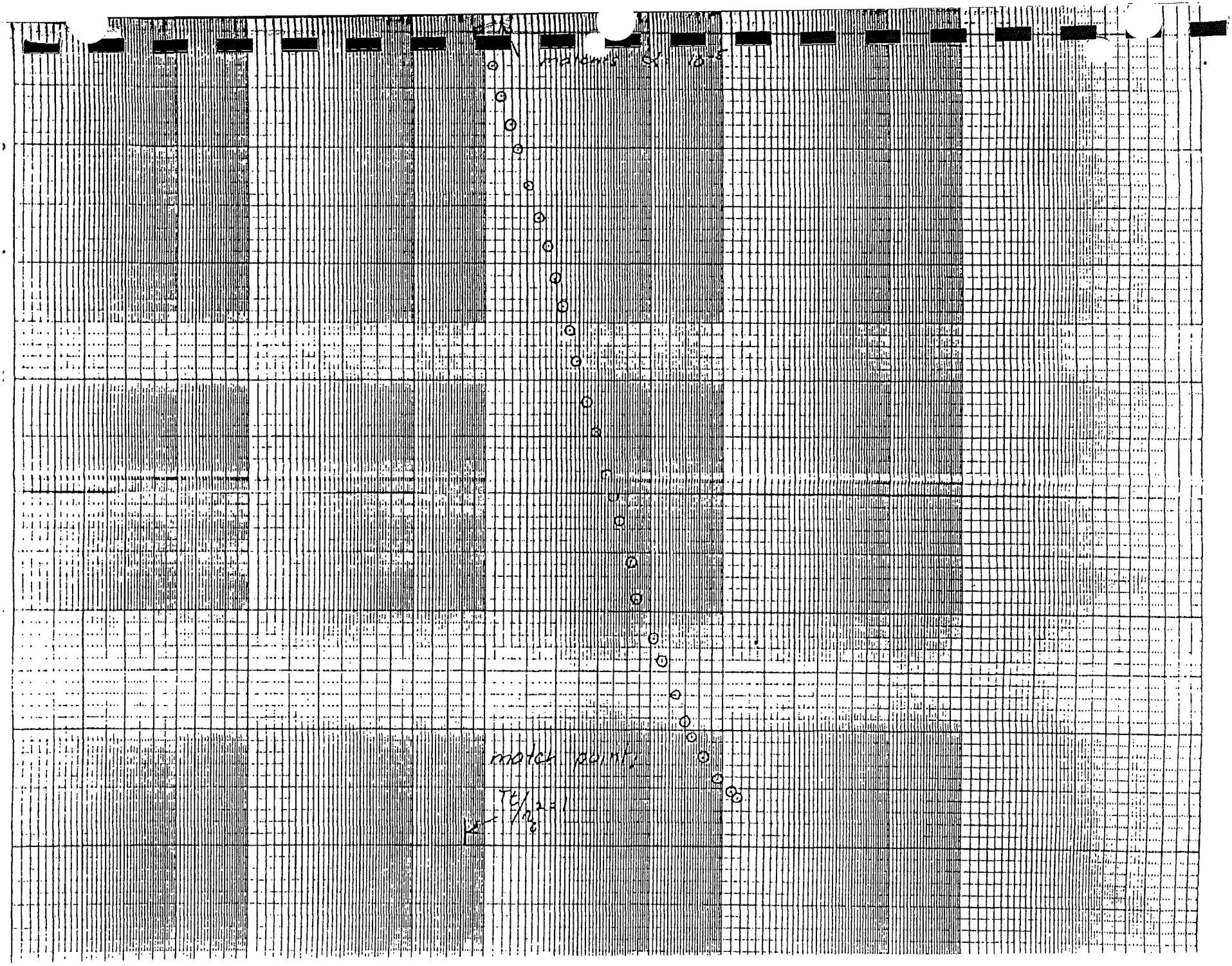



match point
$\tau t/n_e^2 = 1$

RCRA Part A and Part B
Post-Closure Permit Application
Land Treatment Unit
May 2000

APPENDIX C

Land Treatment Unit Historical Information and Data

LAND TREATMENT UNIT HISTORICAL INFORMATION AND DATA

1.0 LAND TREATMENT HISTORY

Historical LTU information and data extracted from existing permit applications, operating permits, operating records, and other source documents are provided as Appendix C. The inclusion of this appendix does not imply that historical information and data have been verified.

In August 1980, Ciniza Refinery (Ciniza) notified the U.S. Environmental Protection Agency (EPA) that it was a generator and operator of a hazardous waste management facility. In November 1980, Ciniza submitted a Part A permit application as an "existing facility" (defined at 40 *Code of Federal Regulations* §260.10). This granted Ciniza interim status for their Land Treatment Unit (LTU) operations. In response to notice from the Regional Administrator, Ciniza submitted a Part B permit application in December 1983. Based on changing guidance, Ciniza submitted a land treatment demonstration plan (LTD) and an application for a two-phase LTD permit in April 1985. On February 9, 1987, Ciniza was issued a Short-term LTD Permit (NMD000333211-1) to conduct a hazardous waste land LTD. The LTD was conducted to identify the land treatment capabilities for refinery waste generated by Ciniza. The LTD defined waste management parameters (e.g., rate-limiting constituent, application-limiting constituent, capacity-limiting constituent, and unit life of the LTU). This was accomplished by identifying the Principal Hazardous Constituents (PHCs) present in refinery waste streams and measuring their degradation, transformation, and immobilization in the treatment zone of the LTU. From the results of the LTD and a modified Part B permit application, Ciniza was issued a Hazardous Waste Facility Permit (NMD 000333211-2) on November 4, 1988. Ciniza has not applied hazardous wastes to the LTU since November 8, 1990.

1.1 Land Treatment Program [20 NMAC 4.1, Subpart IX, §270.20(b)]

Ciniza's Hazardous Waste Facility Permit established operational requirements for the LTU. These requirements inchinclude procedural and engineering controls necessary to ensure that hazardous constituents are fully treated within the LTU without uncontrolled release to the environment.

The LTU consists of a treatment zone of soil extending 5 ft deep from the original soil surface. This depth is shallow enough to ensure that the treatment zone is more than 3 ft above the seasonal high water table. The zone of incorporation (ZOI) within the treatment zone is the volume of soil to which the waste was directly applied.

The ZOI for the Ciniza LTU is the top 12 in. of the treatment zone. The LTU was designed and constructed to prevent both washout of any hazardous waste and to prevent inundation of and discharge from the permitted unit through the use of a continuous dike which surrounds the LTU at an elevation of 3 ft above the natural grade.

The ZOI was tilled during permitted operations to encourage aerobic microbial activity and improve chemical reaction rates. During active treatment soil nutrients were applied, as necessary, to optimize carbon:nitrogen: phosphorous (C:N:P) ratios. Applications of Ciniza wastes to the LTU were limited to ensure that treatment processes were not overwhelmed or poisoned. Performance indicators (e.g., soil moisture, pH, total organic carbon) were monitored in the ZOI to ensure that treatment was proceeding.

1.2 Treatment Zone Description [20 NMAC 4.1, Subpart IX, §270.20(b)(2) and §270.20(b)(5)]

The LTU consists of three 480-by-240-ft sections, each of which contain 2.6 acres (1.0 hectares) of available treatment surface. Each section is delineated by a continuous dike to prevent site runon and runoff. The treatment zone extends 5-ft deep from the top of the soil within the diked section. The top 12 in. of the treatment zone is the ZOI. The ZOI is tilled when active to encourage aerobic degradation of organics and to maintain moisture content of the soil. This leaves 4 ft of the treatment zone undisturbed.

The soil within the treatment zone is silty clay containing closely-spaced root systems in the uppermost 3 to 4 ft. Field infiltration rates (the rate at which water penetrates into the soil surface) averages 1.0×10^{-3} cm/sec or 3.6 cm/hr. Soil permeability as determined by laboratory measurements averages 1.9×10^{-5} cm/sec or 6.8×10^{-2} cm/hr for three locations at the 6- to 12-in. depth. Field infiltration rate allows prediction of runoff and erosion; permeability (hydraulic conductivity) allows estimation of vertical water movement rates in the soil. The treatment zone soils have a saturated hydraulic conductivity rating of "moderately low" by the U.S. Department of Agriculture Class (Giant Refining Company Part B Permit Application 1984). The low permeability of the treatment zone soil assists in retarding the vertical movement of hazardous constituents through the treatment zone.

The silty clay soil has a high cation exchange capacity (CEC). The CEC is the total amount of exchangeable cations that the soil has to exchange with cations in the soil solution. The exchangeable cations in the LTU are the heavy metals present in the Ciniza wastes. The high CEC results in high sorption of heavy metals in the LTU soils, assuming other factors (such as soil pH) are favorable.

RECENT SOIL PERMEABILITY TESTS
FIREWATER POND CONSTRUCTION PROJECT

CRCC

Precision Engineering, Inc.

P.O. Box 422
Las Cruces, NM 88004
505-523-7674

Permeability Sheet

Rigid Wall Hydraulic Conductivity
Falling Head

ATTN: James Romero
Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

Project: Ciniza Fire Water Lagoon — File No.: 05-100
Soil Type: Silty Clay — Date: October 13, 2005 — Lab No.: 47872
Sampled From: Boring 05-100-1(2.5'-3.0') — Performed By: GG

TEST SPECIMEN CONDITIONS AT BEGINING OF TEST:

Wet Unit Weight: 120.8 pcf
Dry Unit Weight: 109.0 pcf

% Moisture: 10.8
% Compaction: n/a
% Compaction Requested: n/a

PROCTOR INFORMATION:

Maximum Dry Density: n/a pcf
Optimum Moisture Content: n/a %

Coefficient of Permeability, k_{20}: 1.1×10^{-7} cm/sec. avg

Remarks: Avg of three: 1.1×10^{-7}, 1.1×10^{-7}, 1.1×10^{-7}

C:\bill\Projects\2005\05100ciniza\rewb1\[Permeability.xls]Report

Reviewed By: Reviewed By: Compiled By:

05-100
SWMU NO. 1
AL2
AL1
Sheet: 1 of
Project: SW Corner
Water Lagoon
Water Elevation: 5828.7
Boring No.: 05-100-1
LAB #
DEPTH
BLOW COUN
0.0-5.0

...SW Corner of Proposed
...Lagoon
...Elevation: -98.2@TD,-27@21 hr
...Add: 05-100-1

Creation Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-100
Site: Giant-Chiza

Elevation: EXISTING
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-5.0				Clay, Very Silty, Sandy, Very Fine, Dark Red, Wet, Firm				
47872				2.5	[2.5-3.0 hydraulic conductivity sample]				
	5.0-10.0			5.0	Same As Above, Wet, Soft				
				7.5					
	10.0-15.0			10.0	Same As Above				
				15.0	Same As Above				
	15.0-16.0								
	16.0-17.5				Sand, Very Fine, Very Clayey, Very Silty, Weak Water Bearing, Moderately Dense, Dark Red/Brown				
	17.5-21.5				Clay, Dark Red, Wet, Soft				
				20.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

C:\bill\Projects\2005\05100chiza\fieldt\[Boring 1.xls]Sheet1

Sheet: 2 OF 5
Base Point: SW Corner of Proposed
Fire Water Lagoon
Water Elevation:
Boring No.: 05-100-1

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7574

File #:
Site: Cliff
Elevation: EXISTING
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS
	21.5-22.1				Clay, Sandy, Dark Brown, Wet, Stiff				
	22.1-23.5				Clay, Hard, Red/Brown (Brighter than Above), Wet/Moist				
	23.5-25.1				Petrified Forest Formation				
	25.0-30.0			25.0	Mudstone/Claystone, Weathered, Some Grey/Green Reduction Spots, Generally Red/Brown, Flasile to Crumbly, Damp/Moist				
	30.0-35.0			30.0	Mudstone, As Above, Few Reduction Spots, Damp/Dry				
					Same As Above dry				
	35.0-40.0			35.0	Same As Above dry				
	40.0-45.0			40.0	Same As Above, Brighter Red @ 44.5-45.0, dry				
	41.5				siltstone/mudstone, dry, very dense,bright red brown				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

C:\bill\Projects\2005\05100cliff\firewall\[Boring 1.xls]Sheet1A

Sheet: 2 OF 5
Bore Point: SW Corner of Proposed
Fire Water Lagoon
Water Elevation:
Boring No.: 05-100-1

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-100
Site: Gila Regional Medical Center Fire Water Lagoon
Elevation: EXISTING GROUND
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS
	21.5-22.1				Clay, Sandy, Dark Brown, Wet, Stiff				
	22.1-23.5				Clay, Hard, Red/Brown (Brighter than Above), Wet/Moist				
	23.5-25.1				Petrified Forest Formation				
	25.0-30.0			25.0	Mudstone/Claystone, Weathered, Some Grey/Green Reduction Spots, Generally Red/Brown, Fissile to Crumbly, Damp/Moist Mudstone, As Above, Few Reduction Spots, Damp/Dry				
	30.0-35.0			30.0	Same As Above dry				
	35.0-40.0			35.0	Same As Above dry				
	40.0-45.0			40.0	Same As Above, Brighter Red @ 44.5-45.0', dry				
	41.5				siltstone/mudstone, dry, very dense,bright red brown				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

C:\bill\Projects\2005\05100cinzafirewt\[Boring 1.xls]Sheet1A

Dyelation Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7874

File #: 05-100
Site: Giant-Cruza

Elevation: EXISTING
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	45.0-50.0			45.0	Mudstone/Siltstone, Bright Red/Brown, Dry Very Dense				
	50.0-55.0			50.0	Same As Above				
	55.0-60.0			55.0	Same As Above				
	60.0-65.0			60.0	Same As Above				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER

LOGGED BY: WHK

Sheet: 4 OF 5
Bore Point: SW Corner of Proposed
Fire Water Lagoon
Water Elevation:
Boring No.: 05-100-1

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-521-7674

Elevation: Existing
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR ETC.)	%M	LL	PI	CLASS
				65.0					
	55.0-56.2				Same As Above				
	56.2-67.4				Sandstone, Fine, Red/Brown, Hard, Fissile, Grey/Green Oolitic/ Reduction Spots Abundant, Dry				
	67.4-78.0				Sandstone/Siltstone Interbeds, Same Mudstone, Dark Red/Brown, Hard, Dry				
				70.0					
				75.0					
	78.0-79.1				Mudstone, Fissile, Dry, Red/Brown, Same Grey/Green Reduction Spots				
	79.1-87.7			80.0	Sandstone, Fine, Red/Brown, Fissile, Hard Feldspathic, Bedded 6" to 1.0', White Mottled Upper Sonsela Member				
				85.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

C:\bill\Projects\2005\05100cinizaifrewdr\Boring 1.xls\Sheet1C

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-100
Site: Giant Cinta

Elevation: EXISTING
Date: 9/24/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS
					Upper Sonsela Member Continued (dry)				
				90.0					
				95.0					
	97.7-98.2				**Mudstone**, Hard, Dry, Green/Grey-White				
	98.2-101.6			100.0	**Sandstone**, Fine to Medium, Quartz Grains, Water Bearing, Hard, (Sonsela Member, Petrified Forest Formation, Chinle Group)				
	101.6				TD				
				105.0	Boring continuopusly sampled using 5' split barreled intrusion sampler. Boring closed using 10' of 3/8" TR-30 Pel Plug capped with 50' of 8% bentonite cement slurry and backfilled to the ground surface with cuttings.				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

C:\bill\Projects\2005\05100cruzaftrewin\[Boring 1.xls]Sheet1D

Appendix B

Field Methods

Field Methods

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

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

Drilling Procedures

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

Soil Screening

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

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

Decontamination Procedures

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

Fluid Level Measurements

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

Temporary Monitoring Well Development/Purging

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

The purge volumes are calculated as follows:

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

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

NA – not applicable
1 – Well SWMU 10-5 was not purged of three well volumes due to very slow recovery rate.
2 – Well SWMU 10-16 was not purged of three well volumes due to very low volume of water in well combined with slow recovery rate.

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

Sample Collection and Handling Procedures

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

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

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

Groundwater samples were collected using disposable bailers and clean rope. The water was immediately poured directly into clean laboratory supplied sample containers with the exception of

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

Equipment Calibration

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

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

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

Management of Investigation Derived Waste

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

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

Appendix C

Boring Logs

DiSorbo
Environmental Consulting Firm

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

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

WELL NO. SWMU 10-1

(Sheet 1 of 1)

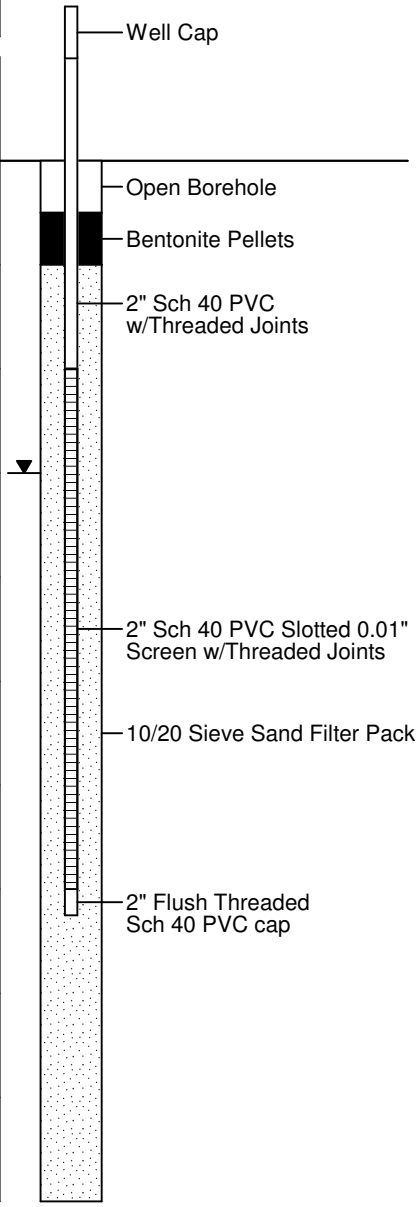
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.429'
E	: W 108° 25.817'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	14.8			CL	100		SILTY CLAY, low, firm, damp, reddish brown, no odor,
2							
3	25.7			CL	50	X	SILTY CLAY, SIMILAR TO ABOVE (STA), no odor,
4							
5	30.9			CL	80	X	SANDY CLAY, low, soft, damp to moist, reddish brown, no odor,
6		▼					
7	26.6			CL	90		SANDY CLAY, STA, very moist in sand seams, no odor,
8							
9	20.7			CH	80		CLAY, high, firm, damp, reddish brown, no odor,
10							
11	17.4			CH	90		CLAY, STA, stiff, no odor,
12							
13	9.2			CH	90		CLAY, STA, water in sampling tube and on rods; clay is damp,
14							
15	11.3			CLST/ MDST	50		CLAYSTONE/MUDSTONE, low, very stiff, hard, light reddish brown, dry, no odor,
16							
17	5.3			CLST	60		CLAYSTONE, STA, no odor,
18							
19	3.6			CLST	90	X	CLAYSTONE, STA, no odor.
20							
21							

Completion Results

SWMU 10-1 (Temporary)



DiSorbo Consulting, LLC

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

8501 N. MoPac Expy, Suite 300
Austin, Texas 78759
512-693-4190

DiSorbo
Environmental Consulting Firm

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: NA
Drilling Method	: 3" Hand Auger
Sampling Method	: Auger Bucket
Comments	:
Total Depth	: 4'
Ground Water	: Not Encountered
Start Date	: 05/04/2015
Finish Date	: 05/04/2015

WELL NO. SWMU 10-2

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.422
E	: W 108° 25.818'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	10.5			CL	100		SILTY CLAY, low to moderate, stiff, damp, brown, gravelly, no odor,
2							
3	8.0			CH	100		CLAY, moderate to high, very stiff, damp, reddish brown, no odor.
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

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DiSorbo
Environmental Consulting Firm

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Cohagan
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: 8' BGL
Start Date	: 04/28/2015
Finish Date	: 04/28/2015

WELL NO. SWMU 10-3

(Sheet 1 of 1)

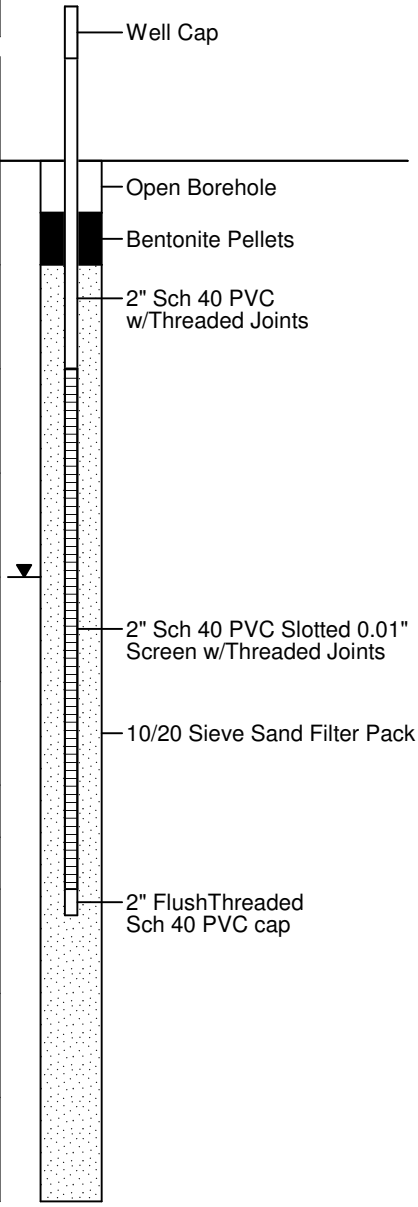
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.427'
E	: W 108° 25.828'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	12.9			CL	100		SILTY CLAY, low, firm, damp, brown, no odor,
2							
3	24.2			CL	50	X	SILTY CLAY, SIMILAR TO ABOVE (STA), slightly moist at base, no odor,
4							
5	16.7			CL	70		SILTY CLAY, STA, trace sand in seams, no odor,
6							
7	18.9			CL	60	X	SILTY CLAY, STA, soft, no odor,
8		▼					
9	17.6			CL	80		SANDY CLAY, low, soft, damp to very moist in sand seams, brown, no odor,
10							
11	13.7			CL	90		SANDY CLAY, STA, no odor,
12				CL	90		SILTY CLAY, moderate, firm, damp, brown, no odor,
13	11.2			CH	90		CLAY, high, firm, damp, brown/reddish brown, no odor,
14							
15	7.6			CLST/ MDST	60		CLAYSTONE/MUDSTONE, low, very stiff, hard, light reddish brown, dry, no odor,
16							
17	7.2			CLST/ MDST	50		CLAYSTONE/MUDSTONE, STA,
18							
19	2.5			CLST/ MDST	90	X	CLAYSTONE/MUDSTONE, STA.
20							
21							

Completion Results

SWMU 10-3 (Temporary)



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512-693-4190

12-15-2015 C:\Users\cholmes\Documents\M-Tech\samples\WEST15005\SWMU 10\SWMU 10-3.bor

DiSorbo
Environmental Consulting Firm

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Cohagan
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 04/29/2015
Finish Date	: 04/29/2015

WELL NO. SWMU 10-4

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.441'
E	: W 108° 25.831'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	40.5			CL	90	X	SILTY CLAY, low, very stiff, damp, brown, no odor,
2							
3	335			CL	90	X	SILTY CLAY, low, firm to soft, damp, dark brown, becomes sandy at base with black staining, odor,
4							
5	36.8			CL	90		SILTY SANDY CLAY, low, firm to soft, damp, reddish brown, faint odor,
6							
7	42.7			CL	60	X	SILTY SANDY CLAY, SIMILAR TO ABOVE (STA), faint odor,
8							
9	37.8			CH	100		CLAY, high, stiff, damp, reddish brown, sandy at base, faint odor,
10							
11	25.6			CL	80		SANDY CLAY, low, soft, damp, very fine sand in seams, reddish brown, no odor,
12							
13	31.1			CL	80		SILTY CLAY, low, firm, damp, reddish brown, trace sand, no odor,
14							
15	32.9			CL	60		SILTY CLAY, low, firm, damp to dry, crumbly, dense at base, reddish brown trace grey, no odor,
16							
17	14.1			CLST	70		CLAYSTONE, very stiff, dry, light reddish brown, no odor,
18							
19	3.8			CLST	60	X	CLAYSTONE, SIMILAR TO ABOVE (STA).
20							
21							

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Cohagan
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 24'
Ground Water	: Not Encountered
Start Date	: 04/29/2015
Finish Date	: 04/29/2015

WELL NO. SWMU 10-5

(Sheet 1 of 1)

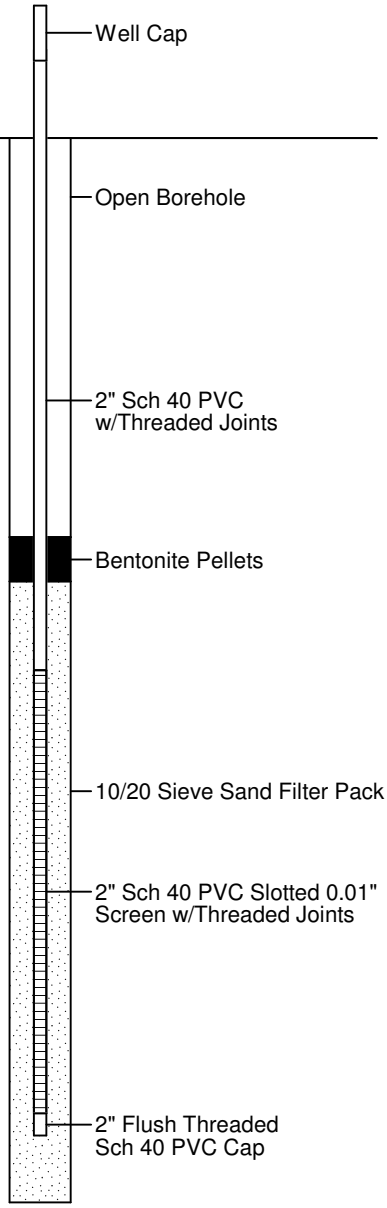
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.432'
E	: W 108° 25.837'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	108			CL	90	X	SILTY CLAY, low, firm, damp, brown, black staining at base, odor,
2							
3	61			CL	60	X	CLAY, low, very soft, damp, wood debris, light greyish green, sticky, odor,
4							
5	445			CL	90	X	CLAY, SIMILAR TO ABOVE (STA), brownish green,odor,
6							
7	330			CL	50		CLAY, STA, odor,
8							
9	30.6			CL	90		CLAY, low, very soft, damp, light greyish green, sticky, odor,
10							
11	26.3			CL	90		CLAY, STA, moist, odor,
12							
13	3.5			CL	90		CLAY, STA, moist, reddish brown clay at 13.75-14' mixed with greyish green clay, odor,
14							
15	75.2			CL	40	X	CLAY, STA, greyish green and reddish brown clay, odor,
16							
17	9.4			CL	90		CLAY, STA,
18							
19	26.8			CL	90		CLAY, STA, greyish green clay only,
20							
21	16.5			CL	40		CLAY, STA, CLAYSTONE at base,
22							
23	10.7			CLST	70	X	CLAYSTONE, very stiff, dry, light reddish brown with grey seams.
24							
25							

Completion Results

SWMU 10-5 (Temporary)



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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: NA
Drilling Method	: 3" Hand Auger
Sampling Method	: Auger Bucket
Comments	:
Total Depth	: 12'
Ground Water	: Not Encountered
Start Date	: 05/04/2015
Finish Date	: 05/04/2015

WELL NO. SWMU 10-6

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.422'
E	: W 108° 25.834'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	2.7			CL	100		SILTY CLAY, low to moderate, firm, damp, reddish brown, no odor,
2							
3	4.3			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA), no odor,
4							
5	4.7			CL	100		SILTY CLAY, STA, no odor,
6							
7	2.9			CL	100		SILTY CLAY, STA, no odor,
8							
9	3.2			CH	100		CLAY, high, very stiff, damp, reddish brown, no odor,
10							
11	4.1			CL	100		CLAY, low, stiff, dry, light reddish brown, refusal, no odor.
12							
13							

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 05/01/2015
Finish Date	: 05/01/2015

WELL NO. SWMU 10-7

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.412'
E	: W 108° 25.833'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	6.2			CL	90		SILTY CLAY, low, firm, damp, brown, no odor,
2							
3	9.5			CL	90	X	SILTY CLAY, SIMILAR TO ABOVE (STA), trace black staining at base, no odor,
4							
5	10.6			CH	90	X	CLAY, high, stiff to firm, damp, reddish brown, no odor,
6							
7	9.7			CH	50		CLAY, STA, no odor,
8							
9	9.1			CLST	60		CLAYSTONE, very stiff, dry, light reddish brown, no odor,
10							
11	4.2			CLST	60		CLAYSTONE, STA, no odor,
12							
13	8.1			CLST	60		CLAYSTONE, STA, no odor,
14							
15	8.9			CLST	60		CLAYSTONE, STA, no odor,
16							
17	8.2			CLST	50		CLAYSTONE, STA, no odor,
18							
19	2.7			CLST	90	X	CLAYSTONE, STA, no odor.
20							
21							

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Cohagan
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20' BGL
Ground Water	: Not Encountered
Start Date	: 04/30/2015
Finish Date	: 04/30/2015

WELL NO. SWMU 10-8

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.427'
E	: W 108° 25.846'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	12.9			CL	50		SILTY CLAY, low, firm, damp, brown, no odor,
2							
3	1489			CL	60	X	SILTY SANDY CLAY, SIMILAR TO ABOVE (STA), sandy, hydrocarbon (hc) odor and staining at base,
4							
5	400			CL	60	X	SILTY SANDY CLAY, STA, odor,
6							
7	-				-		No Recovery,
8							
9	22.9			CLST/ MDST	80		CLAYSTONE/MUDSTONE, very stiff, dry, light reddish brown and grey, no odor,
10							
11	22.8			CLST	60		CLAYSTONE, STA, no odor,
12							
13	24.6			CLST	60		CLAYSTONE, STA, no odor,
14							
15	12.1			CLST	60		CLAYSTONE, STA, no odor,
16							
17	10.2			CLST	70		CLAYSTONE, STA, no odor,
18							
19	5.7			CLST	90	X	CLAYSTONE, STA, no odor.
20							
21							

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 04/30/2015
Finish Date	: 04/30/2015

WELL NO. SWMU 10-9

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.428'
E	: W 108° 25.855'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	18			CL	80		SILTY CLAY, low, firm, dry to damp, brown, no odor,
2							
3	19.1			CL	60	X	SILTY CLAY, SIMILAR TO ABOVE (STA), damp, no odor,
4							
5	380			CL	100	X	SANDY CLAY, low, soft, damp, dark reddish brown with black staining, claystone at base, hydrocarbon (hc) odor,
6							
7	27			CLST	50		CLAYSTONE, very stiff, damp to dry, light reddish brown, odor,
8							
9	28.9			CLST	60		CLAYSTONE, STA, trace grey, no odor,
10							
11	10.7			CLST	70		CLAYSTONE, STA, no odor,
12							
13	4			CLST	60		CLAYSTONE, STA, no odor,
14							
15	8.9			CLST	60		CLAYSTONE, STA, no odor,
16							
17	6.4			CLST	50		CLAYSTONE, STA, no odor,
18							
19	6.2			CLST	80	X	CLAYSTONE, STA, no odor.
20							
21							

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20'
Ground Water	: Not Encountered
Start Date	: 04/30/2015
Finish Date	: 04/30/2015

WELL NO. SWMU 10-10

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.431'
E	: W 108° 25.864'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	11.9			SC	90		CLAYEY SAND, compact to loose, dry to damp, brown, faint odor at base,
2							
3	18.4			SC	90	X	CLAYEY SAND, SIMILAR TO ABOVE (STA), odor,
4							
5	1685			SC	80	X	CLAYEY SAND, compact, damp, brown with black staining, hydrocarbon (hc) odor,
6							
7	1514			CL	60		SANDY CLAY, low, soft, damp to moist, black, hc odor,
8							
9	686			CL	90		SANDY CLAY, STA, black and dark reddish brown, hc odor,
10							
11	655			CL	90		SILTY CLAY, STA, claystone at base, hc odor and hc stain,
12							
13	75			CLST	40		CLAYSTONE, very stiff/dense, light reddish brown and grey, dry, faint odor,
14							
15	18			CLST	50		CLAYSTONE, STA, no odor,
16							
17	16.8			CLST	60		CLAYSTONE, STA, no odor,
18							
19	8.5			CLST	90	X	CLAYSTONE, STA, no odor.
20							
21							

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Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20' BGL
Ground Water	: 4' BGL
Start Date	: 05/12/2015
Finish Date	: 05/12/2015

WELL NO. SWMU 10-11

(Sheet 1 of 1)

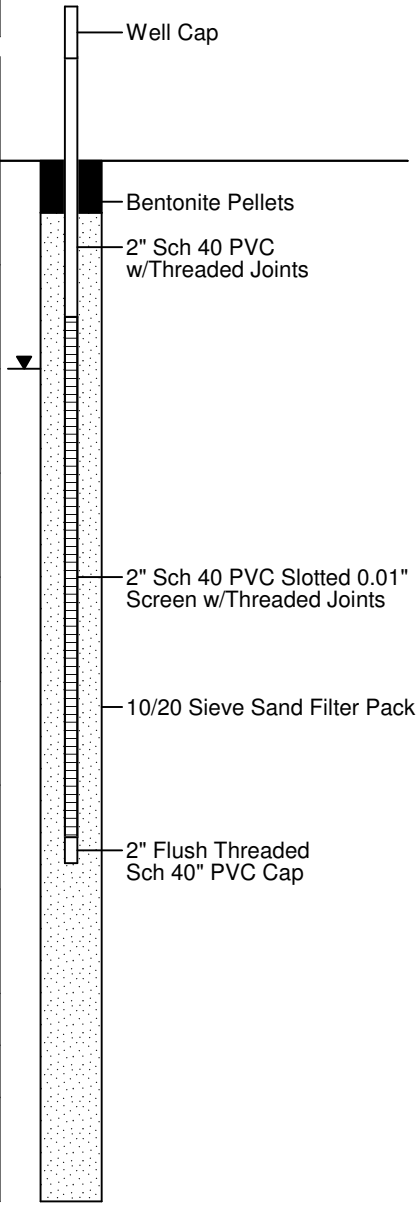
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.434'
E	: W 108° 25.873'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	13.1			CL	80		SILTY CLAY, low, firm, damp, brown, no odor,
2							
3	4.0			CL	10		SILTY CLAY, SIMILAR TO ABOVE (STA),
4		▼					
5	524			SC	50	X	CLAYEY SAND, fine, compact, moist to saturated, black, odor,
6							
7	133			SC	60		CLAYEY SAND, STA, saturated,
8							
9	570			SC	80	X	CLAYEY SAND, STA, dark brown, black sludge lens at 9.75', saturated, odor,
10							
11	8.5			SC	70		CLAYEY SAND, STA, moist to saturated, odor,
12							
13	69.2			SC/CL	70		CLAYEY SAND/SANDY CLAY, low, soft, damp to very moist, brown, odor,
14							
15	20.6			CL	40		SANDY CLAY, low, firm, damp, reddish brown, gravel at base, faint odor,
16				CL	60		SANDY GRAVELLY CLAY, stiff, damp, reddish brown, no odor,
17	7.2			CLST	60		CLAYSTONE, very stiff, damp to dry, reddish purple, no odor,
18							
19	13.4			CLST	60	X	CLAYSTONE, STA, no odor.
20							
21							

Completion Results

SMWU 10-11 (Temporary)



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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 22'
Ground Water	: 4'
Start Date	: 05/12/2015
Finish Date	: 05/12/2015

WELL NO. SWMU 10-12

(Sheet 1 of 1)

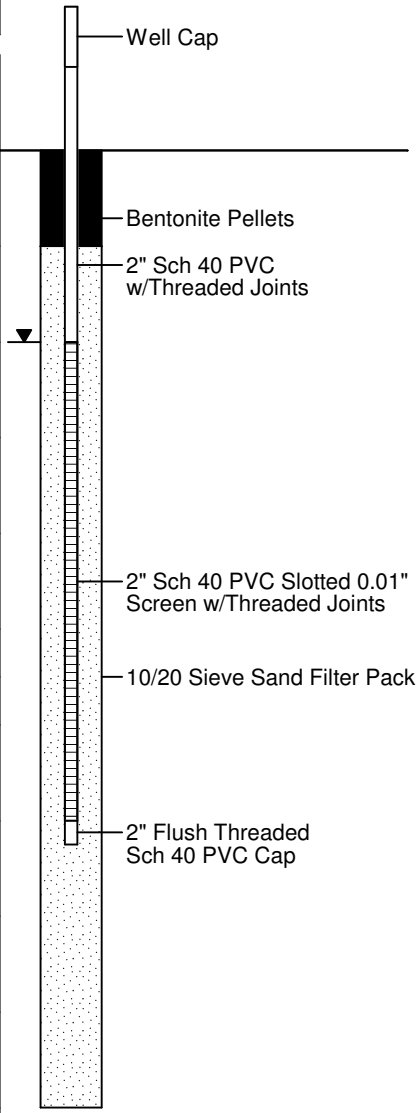
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.435'
E	: W 108° 25.883'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
1	3.0			CL	90		SILTY CLAY, low, firm, damp, brown, no odor,
3	5.4	▼		CL	5		SILTY CLAY, SIMILAR TO ABOVE (STA),
5	6.0			CL	90		SILTY CLAY, STA, trace sand, very moist, no odor,
7	4.5			CL	90	X	SILTY CLAY, STA, damp, occassional black staining, hard black rock asphalt at top, 20 mm,
9	6.1			CL	70		SILTY CLAY, low, soft, damp to moist in sand, occasional gravel, brown, no odor,
10	6.9			CL	70		SILTY CLAY, STA,
11	6.1			SC	70		CLAYEY SAND, fine, compact, saturated, brown, no odor,
13	4.9			SM	90		SILTY SAND, fine, loose, gravelly at 12.5' to 12.75' BGL, saturated, brown, no odor,
15	2.9			SM	90		SILTY SAND, STA,
17	1.8			CL	60		SANDY CLAY, low, firm, damp, brown, no odor,
19	1.2			CL	60		GRAVELLY CLAY, STA, 10 mm gravel, no odor,
21	1.5			CLST	80	X	CLAYSTONE, very stiff, damp to dry, reddish purple, grey and dark reddish brown, no odor.

Completion Results

SMWU 10-12 (Temporary)



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

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20' BGL
Ground Water	: Not Encountered
Start Date	: 05/13/2015
Finish Date	: 05/13/2015

WELL NO. SWMU 10-13

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.437'
E	: W 108° 25.860'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	4.4			CL	90		SILTY CLAY, low, firm, damp to dry, brown, no odor,
2							
3	5.6			CL	80	X	SILTY CLAY, SIMILAR TO ABOVE (STA), very stiff, calcareous, no odor,
4							
5	775			CL	50		SILTY CLAY, STA,
6							
7	1055			CH	90	X	CLAY, high, firm, damp, dark brown, black staining, odor,
8	721			CH	70		GRAVELLY CLAY, STA with 10 mm gravel, trace sand, damp, dark brown, odor,
9				CLST	70		CLAYSTONE, very stiff, dry, reddish purple, faint odor,
10							
11	11			CLST	50		CLAYSTONE, STA, brownish purple and grey, no odor,
12							
13	10.3			CLST	50		CLAYSTONE, STA, reddish brown and grey, no odor,
14							
15	10.4			CLST	70		CLAYSTONE, STA, no odor,
16							
17	12.4			CLST	10		CLAYSTONE, STA, no odor,
18							
19	14.1			CLST	80	X	CLAYSTONE, STA, no odor.
20							
21							

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon 2' Long
Comments	:
Total Depth	: 23' BGL
Ground Water	: 2' BGL
Start Date	: 05/12/2015
Finish Date	: 05/12/2015

WELL NO. SWMU 10-14

(Sheet 1 of 1)

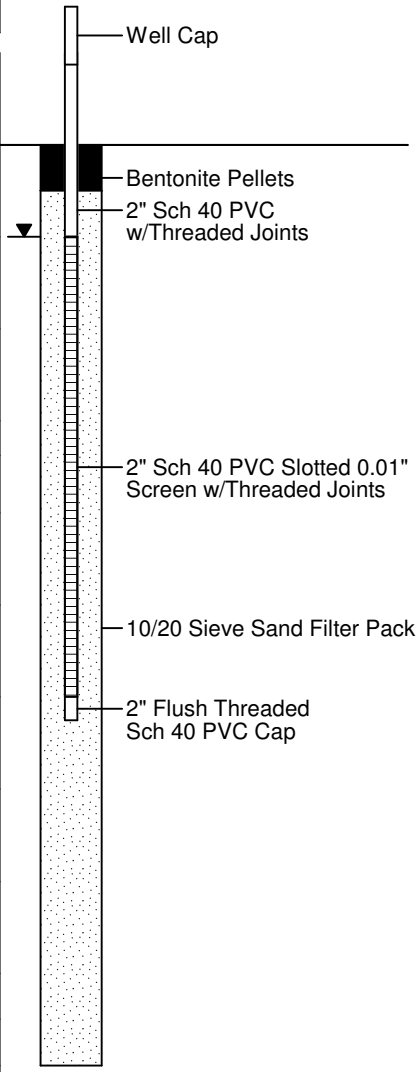
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.424'
E	: W 108° 25.867'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
1	3.2	▼		CL	60		SILTY CLAY, low, firm, dry to damp, brown, no odor,
3					-		No Recovery - Water on Spoon
5	10.1			GC	10		CLAYEY GRAVEL, loose, saturated, light tan, faint odor,
6				CH	50	X	CLAY, high, stiff, damp, dark brown, odor,
7	900			SC	50	X	CLAYEY SAND, fine, compact, saturated, dark brown, odor,
9	23.7			CL	60		SANDY CLAY, low, very soft, damp to moist, brown, odor,
11	15.9			SW	80		CLAYEY GRAVELLY SAND, fine to coarse, saturated, brown, no odor,
13	22.4			SW	80		CLAYEY GRAVELLY SAND, SIMILAR TO ABOVE (STA), saturated, no odor,
15	16.9			SW	70		CLAYEY GRAVELLY SAND, STA, saturated, increase in clay at base, decrease in moisture, no odor,
17	7.9			CL	20		GRAVELLY CLAY, low, very stiff, damp, 10 mm gravel, reddish brown and grey, no odor,
18	5.2			CL	50		GRAVELLY CLAY, STA, no odor,
19				CLST	50		CLAYSTONE, very stiff, dry, reddish brown and grey, no odor,
20	6.1			CLST	20		CLAYSTONE, STA, no odor,
22	1.8			CLST	50	X	CLAYSTONE, STA, no odor.

Completion Results

SMWU 10-14 (Temporary)



DiSorbo Consulting, LLC

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DiSorbo
Environmental Consulting Firm

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: CME75
Drilling Method	: 7.25" Hollow-Stem Auger
Sampling Method	: 2" Diameter Split Spoon
Comments	: 2' Long
Total Depth	: 20' BGL
Ground Water	: 7' BGL
Start Date	: 05/13/2015
Finish Date	: 05/13/2015

WELL NO. SWMU 10-15

(Sheet 1 of 1)

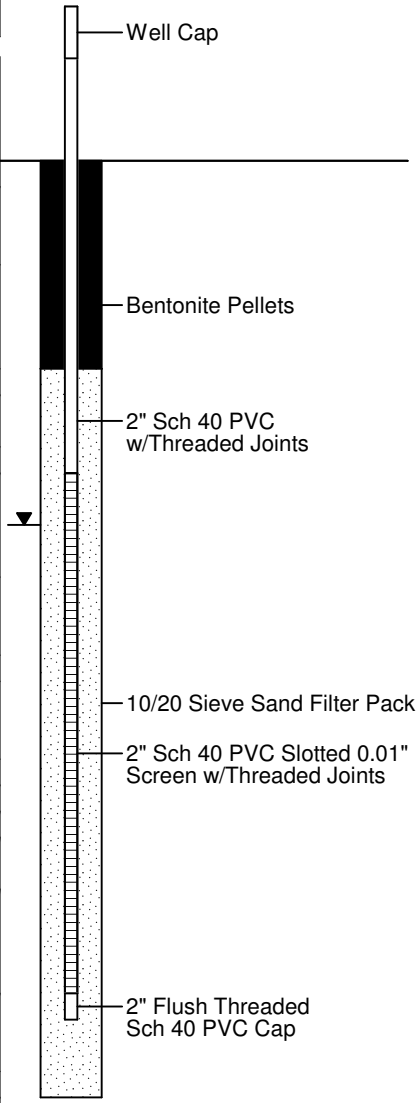
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.446'
E	: W 108° 25.287'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0				CL	90		SILTY CLAY, low, firm, dry to damp, brown, no odor,
1	11.4			CH	90		CLAY, high, soft, damp, sandy at base, brown, no odor,
2							
3	11.1			CL	90		SANDY CLAY, low to moderate, soft, damp, yellow brown to brown with black staining at 3.5' BGL, faint odor,
4				CL	90		SANDY CLAY, SIMILAR TO ABOVE (STA), faint odor,
5	13.9			CH	90		CLAY, high, soft, damp, brown, faint odor,
6				CL	90		SANDY CLAY, low, soft, damp, brown, no odor,
7	12.4	▼		CL	90		SANDY CLAY, STA, saturated sand seam at 7' , 3" thick, no odor,
8							
9	12.3			SC	90		CLAYEY SAND, loose, fine grain to small gravel, saturated, brown, no odor,
10				CH	90		CLAY, high, stiff, damp, brown, no odor,
11	10.7			CL	90		SILTY CLAY, moderate, firm, damp, brown, no odor,
12				CL	90		SANDY CLAY, STA, fine grain sand, moist to very moist at 11.75', no odor,
				CL	90		
13	8.9			CL	90		SANDY CLAY, STA, saturated, brown, no odor.
				SC	90		
14							SILTY CLAY, low, firm, damp, brown, no odor,
15	8.4			CL	70		CLAYEY SAND, fine, loose, saturated, brown, no odor,
16							SANDY CLAY, low, firm, damp, brown, no odor,
17	8.3			CL	90		CLAY, low, stiff, damp, brown, no odor,
18				CLST	90		CLAYSTONE, very stiff, dry, reddish brown, no odor,
19	7.1			CLST	70		CLAYSTONE, STA, no odor.
20							
21							

Completion Results

SWMU 10-15 (Temporary)



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Environmental Consulting Firm

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: NA
Drilling Method	: Hand Auger
Sampling Method	: Auger Bucket
Comments	:
Total Depth	: 9'
Ground Water	: 5.5'
Start Date	: 05/13/2015
Finish Date	: 05/13/2015

WELL NO. SWMU 10-16

(Sheet 1 of 1)

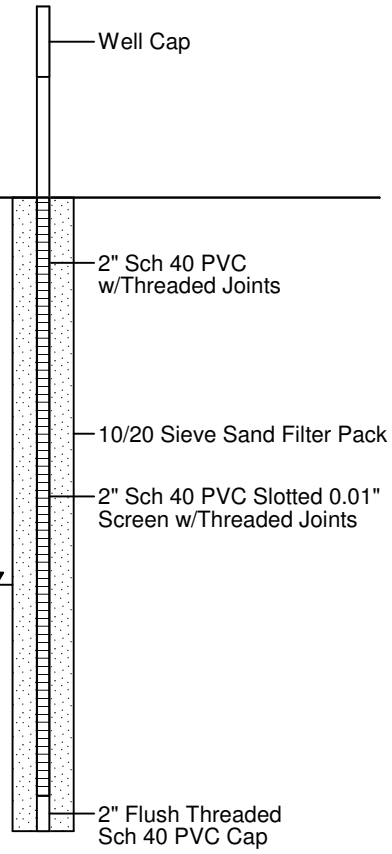
Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.417'
E	: W 108° 25.881'

Saturation
▼ Saturation

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
1	10.4			CL	100		SILTY CLAY, low, firm, damp, brown, no odor,
3	4.9			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA),
4.4				CL	100		SILTY CLAY, STA,
5		▼		CL	100		SANDY CLAY, low, firm to soft, damp to moist to saturated at 5.5', brown, no odor,
8.4				SC	100		CLAYEY SAND, fine, loose, saturated, brown, no odor,
7	0.5			SC	100		CLAYEY SAND, STA, saturated,
8	6.8			CH	100		CLAY, high, stiff, damp, brown, no odor.

Completion Results

SWMU 10-16 (Temporary)



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DiSorbo
Environmental Consulting Firm

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

Geologist	: Tracy Payne
Driller	: Enviro-Drill Inc / Aguirre
Drilling Rig	: NA
Drilling Method	: Hand Auger
Sampling Method	: Auger Bucket
Comments	:
Total Depth	: 8'
Ground Water	: Not Encountered
Start Date	: 05/13/2015
Finish Date	: 05/13/2015

WELL NO. SWMU 10-17

(Sheet 1 of 1)

Elev., TOC (ft.msl)	:
Elev., PAD (ft. msl)	:
Elev., GL (ft. msl)	:
Site Coordinates	:
N	: N 35° 29.437'
E	: W 108° 25.858'

Saturation
▼ Saturation

Completion Results

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
-2							
-1							
0							
1	3.8			CL	100		SILTY CLAY, low, stiff, damp, brown, no odor,
2							
3	4.1			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA), sandy at base,
4							
5	292			SC	100		CLAYEY SAND, fine, compact, damp, faint odor,
6							
7	1667			SC	100		CLAYEY SAND, STA, moist at base, odor.
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

DiSorbo Consulting, LLC

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Appendix D

Analytical Data Reports

SWMU 10 analytical reports

Rpt_1504C86_Final_v2
Rpt_1504C87_Final_v2
Rpt_1505001_Final_v2
Rpt_1505002_Final_v2
Rpt_1505003_Final_v2
1505003 Addendum
Rpt_1505004_Final_v2
Rpt_1505005_Final_v2
Rpt_1505047_Final_v2
Rpt_1505048_Final_v2
Rpt_1505057_Final_v3
Rpt_1505058_Final_v2
Rpt_1505059_Final_v2
Rpt_1505218_Final_v2
Rpt_1505222_Final_v2
Rpt_1505223_DOC080415_v1 - CRVI reanalysis
Rpt_1505223_Final_v4
Rpt_1505570_Final_v2
Rpt_1505617_Final_v2
Rpt_1505618_Final_v2
Rpt_1505698_Final_v2
Rpt_1505700_Final_v3
Rpt_1505701_Final_v2
Rpt_1505705_Final_v2
Rpt_1505708_Final_v2
Rpt_1505709_Final_v2
Rpt_1505710_Final_v2
Rpt_1505A00_Final_v1

Appendix D

Analytical Data Reports

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

October 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1504C86

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/29/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 01, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1504C86**
Date Reported: **10/5/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C86-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB01
Collection Date: 4/28/2015 4:50:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 1:48:33 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 1:48:33 PM	18985
Surr: DNOP	104	0	76.5-150		%REC	1	5/1/2015 1:48:33 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/5/2015 11:58:11 AM	R25979
Surr: BFB	92.9	0	80-120		%REC	1	5/5/2015 11:58:11 AM	R25979
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	4/30/2015 5:24:21 PM	R25896
Chloride	ND	0.13	0.50		mg/L	1	4/30/2015 5:24:21 PM	R25896
Sulfate	ND	0.11	0.50		mg/L	1	4/30/2015 5:24:21 PM	R25896
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Beryllium	0.00067	0.00031	0.0020	J	mg/L	1	4/30/2015 2:11:15 PM	R25881
Cadmium	ND	0.00097	0.0020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Chromium	0.0030	0.0018	0.0060	J	mg/L	1	4/30/2015 2:11:15 PM	R25881
Cobalt	ND	0.0013	0.0060		mg/L	1	4/30/2015 2:11:15 PM	R25881
	ND	0.0073	0.020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Manganese	ND	0.00027	0.0020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Nickel	ND	0.0021	0.010		mg/L	1	4/30/2015 2:11:15 PM	R25881
Silver	ND	0.0012	0.0050		mg/L	1	4/30/2015 2:11:15 PM	R25881
Vanadium	ND	0.0015	0.050		mg/L	1	4/30/2015 2:11:15 PM	R25881
Zinc	0.016	0.0028	0.010		mg/L	1	4/30/2015 2:11:15 PM	R25881
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Beryllium	ND	0.00031	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Cadmium	ND	0.00097	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Chromium	ND	0.0022	0.0060		mg/L	1	5/4/2015 2:06:05 PM	R25943
Cobalt	ND	0.0013	0.0060		mg/L	1	5/4/2015 2:06:05 PM	R25943
Iron	ND	0.0073	0.020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Manganese	ND	0.0015	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Nickel	ND	0.0023	0.010		mg/L	1	5/4/2015 2:06:05 PM	R25943
Silver	ND	0.0021	0.0050		mg/L	1	5/4/2015 2:06:05 PM	R25943
Vanadium	ND	0.0015	0.050		mg/L	1	5/4/2015 2:06:05 PM	R25943
Zinc	ND	0.0036	0.010		mg/L	1	5/4/2015 2:06:05 PM	R25943
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00038	0.00014	0.0010	J	mg/L	1	5/11/2015 2:12:40 PM	R26119
Arsenic	ND	0.000065	0.0010		mg/L	1	5/11/2015 2:12:40 PM	R26119

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C86-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB01
Collection Date: 4/28/2015 4:50:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	ND	0.000026	0.0010		mg/L	1	5/11/2015 2:12:40 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 2:12:40 PM	R26119
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	0.00051	0.00022	0.0010	J	mg/L	1	5/11/2015 12:57:22 PM	R26119
Arsenic	ND	0.00044	0.0010		mg/L	1	5/11/2015 12:57:22 PM	R26119
Lead	ND	0.000069	0.00050		mg/L	1	5/11/2015 12:57:22 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 12:57:22 PM	R26119
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:09:31 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C86-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB01
Collection Date: 4/28/2015 4:50:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
xachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
xachloroethane	ND	1.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 8:36:16 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C86-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB01
Collection Date: 4/28/2015 4:50:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Surr: 2-Fluorophenol	89.9	0	14.9-111		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: Phenol-d5	86.1	0	11.3-108		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: 2,4,6-Tribromophenol	108	0	15.7-154		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: Nitrobenzene-d5	111	0	47.8-106	S	%REC	1	5/5/2015 8:36:16 PM	18996
Surr: 2-Fluorobiphenyl	106	0	21.3-123		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: 4-Terphenyl-d14	93.2	0	14.3-135		%REC	1	5/5/2015 8:36:16 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Toluene	0.21	0.11	1.0	J	µg/L	1	5/6/2015 2:07:35 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Acetone	2.2	0.94	10	J	µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C86-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB01
Collection Date: 4/28/2015 4:50:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
thylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 2:07:35 PM	R26017
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017
Surr: 4-Bromofluorobenzene	98.7	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C86-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB01
Collection Date: 4/28/2015 4:50:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	97.4	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017
Surr: Toluene-d8	98.2	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017

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Qualifiers:

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

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	150501022
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1504C86
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	150501022-001	**Sampling Date**	4/28/2015	**Date/Time Received**	5/1/2015 11:40 AM
Client Sample ID	1504C86-001H / SWMU 10 EB01			**Sampling Time**	4:50 PM
Matrix	Water	**Sample Location**			
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	5/5/2015	CRW	EPA 335.4	

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 150501022
Project Name: 1504C86

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Cyanide	0.500	mg/L	0.5	100.0	90-110	5/5/2015	5/5/2015

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
150424028-004	Cyanide	ND	0.512	mg/L	0.5	102.4	90-110	5/5/2015	5/5/2015

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide	0.500	mg/L	0.5	100.0	2.4	0-20	5/5/2015	5/5/2015

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide	ND	mg/L	0.01	5/5/2015	5/5/2015

AR	Acceptable Range
ND	Not Detected
PQL	Practical Quantitation Limit
RPD	Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 11, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762537-01

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C86-001I SWMU 10 EB01

Project # :

Collected By :
Collection Date : 04/28/15 16:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/11/15 10:38 Printed: 05/11/15 10:38

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Est. 1970

Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Method Blank Summary

ıstrument	Client Sample ID	Lab Sample ID	File Name	Analysis Date	Analysis Time
C-13	Blank WG787240	Blank WG787240	8	5/8/2015	3:45 PM
C-13	LCS WG787240	LCS WG787240	10	5/8/2015	4:04 PM
C-13	LCSD WG787240	LCSD WG787240	11	5/8/2015	4:12 PM
C-13	DUP WG787240	DUP WG787240	15	5/8/2015	5:12 PM
C-13	MSD WG787240	MSD WG787240	24	5/8/2015	6:25 PM
C-13	MS WG787240	MS WG787240	26	5/8/2015	6:55 PM
C-13	1504C86-001I SWMU 10 EB01	L762537-01	42	5/8/2015	9:24 PM
C	DUP WG787240	DUP WG787240	46	5/8/2015	9:57 PM

ESC
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Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Method Blank

Analyte	CAS	RDL	Qualifier
Hexavalent Chromium	18540-29-9	< 0.000500	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Hexavalent Chromium	1	0.002	0.0018	91.5	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Hexavalent Chromium	1	0.002	0.0019	95	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
Hexavalent Chromium	1	0.002	0.0018	91.5	0.0019	95	90 - 110		3.75	20	

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Est. 1970

Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Sample Duplicate
L762055-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Hexavalent Chromium	1	<0.0005	<0.0005		20	

Sample Duplicate
L762910-04

lyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
xavalent Chromium	1	0.0008	0.0007	6.8	20	

Matrix Spike / Matrix Spike Duplicate
L762372-02

nalyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
lexavalent Chromium	1	0.05	0.001	0.0509	99.8	0.0508	99.6	90 - 110		0.2	20	

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Est. 1970

Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 3:56 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.049	98.5	90 - 110

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 6:09 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.049	98.1	90 - 110

ESC
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Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 6:34 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.050	99.2	90 - 110

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 7:05 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.050	101	90 - 110

ESC
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YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
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Est. 1970

Quality Control Summary
SDG: L762537
Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011
Project No:
Project:
Collection Date: 4/28/2015
Analysis Date: 5/8/2015
Instrument ID: IC-13
Sample Numbers: L762537-01

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG787240
Analyst: 183

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 8:59 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.051	101	90 - 110

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13
Date Analyzed: 5/8/2015
Time Analyzed: 10:05 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.051	102	90 - 110

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **R25881** RunNo: **25881**

Prep Date: Analysis Date: **4/30/2015** SeqNo: **767038** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	0.0023	0.0050								J
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **R25881** RunNo: **25881**

Prep Date: Analysis Date: **4/30/2015** SeqNo: **767039** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible]	0.49	0.0020	0.5000	0	97.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.0	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.7	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.47	0.0020	0.5000	0	93.3	85	115			
Nickel	0.48	0.010	0.5000	0	96.8	85	115			
Silver	0.089	0.0050	0.1000	0	89.3	85	115			
Vanadium	0.50	0.050	0.5000	0	99.3	85	115			
Zinc	0.48	0.010	0.5000	0	97.0	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **R25943** RunNo: **25943**

Prep Date: Analysis Date: **5/4/2015** SeqNo: **768973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768974** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.1	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.2	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.4	85	115			
Iron	0.47	0.020	0.5000	0	94.4	85	115			
[illegible]nese	0.47	0.0020	0.5000	0	93.7	85	115			
Nickel	0.47	0.010	0.5000	0	93.6	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.4	85	115			
Zinc	0.47	0.010	0.5000	0	93.5	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **R25881** RunNo: **25881**

Prep Date: Analysis Date: **4/30/2015** SeqNo: **767040** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	0.0015	0.0050								J
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **LCSW** Batch ID: **R25881** RunNo: **25881**

Prep Date: Analysis Date: **4/30/2015** SeqNo: **767041** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible]	0.49	0.0020	0.5000	0	97.2	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.2	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.5	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.088	0.0050	0.1000	0	87.9	85	115			
Vanadium	0.50	0.050	0.5000	0	99.4	85	115			
Zinc	0.48	0.010	0.5000	0	96.1	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**

Client ID: **PBW** Batch ID: **R25943** RunNo: **25943**

Prep Date: Analysis Date: **5/4/2015** SeqNo: **768975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.50	0.0020	0.5000	0	99.0	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Iron	0.48	0.020	0.5000	0	95.1	85	115			
Manganese	0.47	0.0020	0.5000	0	93.5	85	115			
Nickel	0.47	0.010	0.5000	0	93.8	85	115			
S	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.6	85	115			
Zinc	0.48	0.010	0.5000	0	96.7	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774818** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774819** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Date: Analysis Date: **5/11/2015** SeqNo: **774821** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774822** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Date:	Analysis Date: **5/11/2015**	SeqNo: **774865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19047**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19047**	RunNo:	**25969**
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769643** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19047**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19047**	RunNo:	**25969**
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769644** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBW** Batch ID: **R25896** RunNo: **25896**

Prep Date: Analysis Date: **4/30/2015** SeqNo: **767580** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSW** Batch ID: **R25896** RunNo: **25896**

Prep Date: Analysis Date: **4/30/2015** SeqNo: **767581** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.3	90	110			
Chloride	4.8	0.50	5.000	0	96.2	90	110			
Sulfate	9.7	0.50	10.00	0	96.8	90	110			

Sample ID **1504C86-001EMS** SampType: **MS** TestCode: **EPA Method 300.0: Anions**

Client ID: **SWMU 10 EB01** Batch ID: **R25896** RunNo: **25896**

Prep Date: Analysis Date: **4/30/2015** SeqNo: **767603** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	101	66.1	113			
Chloride	4.8	0.50	5.000	0	95.1	81.8	112			
Sulfate	9.6	0.50	10.00	0	95.7	88.3	114			

Sample ID **1504C86-001EMSD** SampType: **MSD** TestCode: **EPA Method 300.0: Anions**

Client ID: **SWMU 10 EB01** Batch ID: **R25896** RunNo: **25896**

Prep Date: Analysis Date: **4/30/2015** SeqNo: **767604** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	66.1	113	2.46	20	
Chloride	4.8	0.50	5.000	0	96.1	81.8	112	1.00	20	
Sulfate	9.7	0.50	10.00	0	96.6	88.3	114	0.907	20	

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBW** Batch ID: **R25896** RunNo: **25896**

Prep Date: Analysis Date: **4/30/2015** SeqNo: **767632** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**		TestCode: **EPA Method 300.0: Anions**		
Client ID: **LCSW**	Batch ID: **R25896**		RunNo: **25896**		
Prep Date:	Analysis Date: **4/30/2015**		SeqNo: **767633**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.7	90	110			
Chloride	4.7	0.50	5.000	0	94.3	90	110			
Sulfate	9.5	0.50	10.00	0	94.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-18985** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW** Batch ID: **18985** RunNo: **25902**
Prep Date: **4/30/2015** Analysis Date: **5/1/2015** SeqNo: **767854** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID **LCS-18985** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW** Batch ID: **18985** RunNo: **25902**
Prep Date: **4/30/2015** Analysis Date: **5/1/2015** SeqNo: **767970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Sample ID **1504C86-001CMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **SWMU 10 EB01** Batch ID: **18985** RunNo: **25902**
Prep Date: **4/30/2015** Analysis Date: **5/1/2015** SeqNo: **767980** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible] Range Organics (DRO)	5.7	1.0	5.000	0	115	75.9	164			
[illegible]: DNOP	0.60		0.5000		119	76.5	150			

Sample ID **1504C86-001CMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **SWMU 10 EB01** Batch ID: **18985** RunNo: **25902**
Prep Date: **4/30/2015** Analysis Date: **5/1/2015** SeqNo: **767994** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	75.9	164	2.68	22.1	
Surr: DNOP	0.59		0.5000		117	76.5	150	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768862** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	18		20.00		88.4	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768863** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	18		20.00		91.1	80	120			

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R25979**	RunNo: **25979**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **769934** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		93.8	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R25979**	RunNo: **25979**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **769935** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.7	80	120			
Surr: BFB	20		20.00		99.1	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**	
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
[illegible] disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
richlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**		TestCode: **EPA Method 8260B: VOLATILES**		
Client ID: **LCSW**	Batch ID: **R26017**		RunNo: **26017**		
Prep Date:	Analysis Date: **5/6/2015**		SeqNo: **771283**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butylbenzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**	
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
N[illegible]alene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-18996** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSW** Batch ID: **18996** RunNo: **25988**

Prep Date: **5/1/2015** Analysis Date: **5/5/2015** SeqNo: **770337** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID **lcsd-18996** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS02** Batch ID: **18996** RunNo: **25988**

Prep Date: **5/1/2015** Analysis Date: **5/5/2015** SeqNo: **770338** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C86**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcsd-18996**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **LCSS02**	Batch ID: **18996**		RunNo: **25988**		
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**		SeqNo: **770338**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1504C86** RcptNo: **1**

Received by/date: RM 04/29/15

Logged By: **Ashley Gallegos** **4/29/2015 4:00:00 PM** AG

Completed By: **Ashley Gallegos** **4/30/2015 11:21:25 AM** AG

Reviewed By: 04/30/15

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
    # of preserved bottles checked for pH: 21 (<2 or >12 unless noted)
    Adjusted? NO
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)
    Checked by: AR

Special Handling (If applicable)

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

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504C86	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS - TOTAL & DISSOLVE (SEE ATTACHED SHEET)	GEN CHEM	CR6	Air Bubbles (Y or N)
1/29/15	1650	WATER	SWMU 10 EB01	40 ML VOA-6	HCL	-001			✓							✓					
				1 LITER AMBER-2	NEAT												✓		✓		
				250 ML AMBER-1	NEAT					✓											
				100 ML PLASTIC-1	HNO_3													✓			
				500 ML PLASTIC-1	HNO_3													✓			
				500 ML PLASTIC-1	NAOH								✓								
				50 ML PLASTIC-1	$(NH_4)_2SO_4$															✓	

Date	Time	Relinquished by:	Received by:	Date	Time
1/29/15	0720	[signature]	[signature]	1/29/15	7:22
1/29/15	1600	[signature]	[signature]	01/29/15	1600

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

October 05, 2015

Thurman B. Larsen
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0258
FAX (505) 722-0210

RE: SWMU 10 OrderNo.: 1504C87

Dear Thurman B. Larsen:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/29/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 04, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (2-4')
Collection Date: 4/28/2015 1:53:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	93	5.4	9.8		mg/Kg-dr	1	5/1/2015 12:54:24 PM	18983
Motor Oil Range Organics (MRO)	53	49	49		mg/Kg-dr	1	5/1/2015 12:54:24 PM	18983
Surr: DNOP	105	0	57.9-140		%REC	1	5/1/2015 12:54:24 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.0	3.5		mg/Kg-dr	1	5/1/2015 11:11:48 AM	R25904
Surr: BFB	90.1	0	80-120		%REC	1	5/1/2015 11:11:48 AM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	19	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0066	0.0038	0.043	J	mg/Kg-dr	1	5/6/2015 3:17:02 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Arsenic	0.97	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Barium	200	0.036	0.12		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Beryllium	1.1	0.0089	0.18		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
[illegible]mium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Chromium	10	0.072	0.36		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Cobalt	5.2	0.045	0.36		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Iron	16000	72	300		mg/Kg-dr	100	5/7/2015 10:48:49 AM	19080
Lead	3.2	0.13	0.30		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Manganese	300	0.070	0.12		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Nickel	9.1	0.15	0.60		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Vanadium	20	0.040	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Zinc	17	0.77	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Acenaphthylene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Aniline	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Azobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benz(a)anthracene	ND	0.097	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(a)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(b)fluoranthene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (2-4')
Collection Date: 4/28/2015 1:53:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.070	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzyl alcohol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-chloroethoxy)methane	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.094	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Butyl benzyl phthalate	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Carbazole	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Chloroaniline	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Chloronaphthalene	ND	0.13	0.31		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Chlorophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Chlorophenyl phenyl ether	ND	0.18	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Chrysene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Di-n-butyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Di-n-octyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
enz(a,h)anthracene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
3,3'-Dichlorobenzidine	ND	0.095	0.31		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Diethyl phthalate	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Dimethyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dichlorophenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dimethylphenol	ND	0.097	0.37		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.067	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dinitrophenol	ND	0.051	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,6-Dinitrotoluene	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Fluoranthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Fluorene	ND	0.17	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachlorobutadiene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachlorocyclopentadiene	ND	0.085	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Isophorone	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (2-4')
Collection Date: 4/28/2015 1:53:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Methylphenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
3+4-Methylphenol	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
N-Nitrosodi-n-propylamine	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
3-Nitroaniline	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Nitroaniline	ND	0.11	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Nitrophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Nitrophenol	ND	0.11	0.31		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Pentachlorophenol	ND	0.077	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Phenanthrene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Phenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Pyrene	ND	0.16	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
'dine	ND	0.10	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Surr: 2-Fluorophenol	80.2		26.4-129		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: Phenol-d5	80.8		34.8-118		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: 2,4,6-Tribromophenol	86.9		26.8-128		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: Nitrobenzene-d5	77.7		35.8-124		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: 2-Fluorobiphenyl	82.7		24.5-139		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: 4-Terphenyl-d14	80.5		29.4-129		%REC	1	5/7/2015 4:00:49 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0051	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Toluene	ND	0.0041	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Ethylbenzene	ND	0.0032	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.0049	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,4-Trimethylbenzene	0.0061	0.0017	0.035	J	mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,3,5-Trimethylbenzene	ND	0.0023	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.014	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.0027	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Naphthalene	ND	0.0082	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1-Methylnaphthalene	ND	0.021	0.14		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Methylnaphthalene	ND	0.023	0.14		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (2-4')
Collection Date: 4/28/2015 1:53:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Acetone	0.043	0.026	0.52	J	mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromobenzene	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromodichloromethane	ND	0.0028	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromoform	ND	0.0028	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromomethane	ND	0.0067	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Butanone	ND	0.022	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Carbon disulfide	ND	0.025	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Carbon tetrachloride	ND	0.0034	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chlorobenzene	ND	0.0027	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chloroethane	ND	0.027	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chloroform	ND	0.0036	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chloromethane	ND	0.0040	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Chlorotoluene	ND	0.0039	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
4-Chlorotoluene	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
cis-1,2-DCE	ND	0.0044	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
cis-1,3-Dichloropropene	ND	0.0024	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.0059	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
·omochloromethane	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
⊥ıbromomethane	ND	0.0036	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dichlorobenzene	ND	0.0021	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,3-Dichlorobenzene	ND	0.0041	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,4-Dichlorobenzene	ND	0.0043	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Dichlorodifluoromethane	ND	0.0087	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1-Dichloroethane	ND	0.014	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1-Dichloroethene	ND	0.0024	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dichloropropane	ND	0.0019	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,3-Dichloropropane	ND	0.0048	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2,2-Dichloropropane	ND	0.0050	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1-Dichloropropene	ND	0.0051	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Hexachlorobutadiene	ND	0.0048	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Hexanone	ND	0.0085	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Isopropylbenzene	ND	0.0029	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
4-Isopropyltoluene	ND	0.0025	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
4-Methyl-2-pentanone	ND	0.0060	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Methylene chloride	ND	0.014	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
n-Butylbenzene	ND	0.0030	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
n-Propylbenzene	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
sec-Butylbenzene	ND	0.0049	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Styrene	ND	0.0063	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (2-4')
Collection Date: 4/28/2015 1:53:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
tert-Butylbenzene	ND	0.0040	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.0028	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.0042	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Tetrachloroethene (PCE)	ND	0.0030	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
trans-1,2-DCE	ND	0.0022	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
trans-1,3-Dichloropropene	ND	0.0062	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,3-Trichlorobenzene	ND	0.0074	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,4-Trichlorobenzene	ND	0.0064	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,1-Trichloroethane	ND	0.0052	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,2-Trichloroethane	ND	0.0041	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Trichloroethene (TCE)	ND	0.0034	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Trichlorofluoromethane	ND	0.010	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,3-Trichloropropane	ND	0.0058	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Vinyl chloride	ND	0.014	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Xylenes, Total	ND	0.0096	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Surr: Dibromofluoromethane	100		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982
Surr: 1,2-Dichloroethane-d4	92.1		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982
Surr: Toluene-d8	92.1		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982
Surr: 4-Bromofluorobenzene	93.6		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (4-6')
Collection Date: 4/28/2015 2:04:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/1/2015 10:39:47 AM	18983
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/1/2015 10:39:47 AM	18983
Surr: DNOP	104	0	57.9-140		%REC	1	5/1/2015 10:39:47 AM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.99	3.3		mg/Kg-dr	1	5/1/2015 11:40:34 AM	R25904
Surr: BFB	89.9	0	80-120		%REC	1	5/1/2015 11:40:34 AM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	21	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0063	0.0036	0.041	J	mg/Kg-dr	1	5/6/2015 3:18:49 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.9	1.7	3.2	J	mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Arsenic	1.7	0.37	3.2	J	mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Barium	130	0.038	0.13		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Beryllium	1.1	0.0094	0.19		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Cadmium	ND	0.035	0.13		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Chromium	10	0.077	0.38		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Cobalt	5.4	0.048	0.38		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Iron	17000	77	320		mg/Kg-dr	100	5/7/2015 10:51:53 AM	19080
Lead	3.2	0.14	0.32		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Manganese	290	0.075	0.13		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Nickel	9.6	0.16	0.64		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Selenium	ND	1.9	3.2		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Silver	ND	0.038	0.32		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Vanadium	18	0.042	3.2		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Zinc	16	0.82	3.2		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Acenaphthylene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Aniline	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Anthracene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Azobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benz(a)anthracene	ND	0.099	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(a)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(b)fluoranthene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (4-6')
Collection Date: 4/28/2015 2:04:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.072	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzyl alcohol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-chloroethoxy)methane	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.096	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Butyl benzyl phthalate	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Carbazole	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Chloro-3-methylphenol	ND	0.13	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Chloroaniline	ND	0.12	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Chloronaphthalene	ND	0.13	0.32		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Chlorophenol	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Chlorophenyl phenyl ether	ND	0.19	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Chrysene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Di-n-butyl phthalate	ND	0.14	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Di-n-octyl phthalate	ND	0.14	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
enz(a,h)anthracene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
3,3'-Dichlorobenzidine	ND	0.097	0.32		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Diethyl phthalate	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Dimethyl phthalate	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dichlorophenol	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dimethylphenol	ND	0.099	0.38		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.068	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dinitrophenol	ND	0.052	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,6-Dinitrotoluene	ND	0.14	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Fluoranthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Fluorene	ND	0.17	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachlorobutadiene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachlorocyclopentadiene	ND	0.087	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Isophorone	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (4-6')
Collection Date: 4/28/2015 2:04:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Methylnaphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Methylphenol	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
3+4-Methylphenol	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
N-Nitrosodi-n-propylamine	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
3-Nitroaniline	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Nitroaniline	ND	0.11	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Nitrobenzene	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Nitrophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Nitrophenol	ND	0.11	0.32		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Pentachlorophenol	ND	0.079	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Phenanthrene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Phenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Pyrene	ND	0.16	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
idine	ND	0.11	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
,,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4,5-Trichlorophenol	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4,6-Trichlorophenol	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Surr: 2-Fluorophenol	68.1		26.4-129		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: Phenol-d5	70.1		34.8-118		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: 2,4,6-Tribromophenol	65.1		26.8-128		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: Nitrobenzene-d5	65.6		35.8-124		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: 2-Fluorobiphenyl	65.1		24.5-139		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: 4-Terphenyl-d14	71.5		29.4-129		%REC	1	5/7/2015 5:25:11 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00211	0.000387	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Toluene	0.00253	0.000179	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Ethylbenzene	0.0318	0.000289	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Xylenes, Total	0.197	0.00103	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Methyl tert-butyl ether (MTBE)	0.00669	0.000721	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,4-Trimethylbenzene	0.000619	0.000449	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,3,5-Trimethylbenzene	0.000318	0.000302	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000461	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000206	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Naphthalene	0.000877	0.000562	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1-Methylnaphthalene	ND	0.000675	0.00344		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (4-6')
Collection Date: 4/28/2015 2:04:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000672	0.00344		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Acetone	0.00926	0.00107	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromobenzene	ND	0.000478	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromodichloromethane	ND	0.000232	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromoform	ND	0.000445	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromomethane	ND	0.00102	0.00258		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2-Butanone	0.00257	0.000550	0.00860	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Carbon tetrachloride	ND	0.000311	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chlorobenzene	ND	0.000174	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chloroethane	ND	0.00172	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chloroform	ND	0.000354	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chloromethane	ND	0.000203	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2-Chlorotoluene	ND	0.000336	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Carbon disulfide	ND	0.000778	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
4-Chlorotoluene	ND	0.000331	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
cis-1,2-DCE	ND	0.000455	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
cis-1,3-Dichloropropene	ND	0.00172	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Dibromo-3-chloropropane	ND	0.000505	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Dibromochloromethane	ND	0.000193	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Dibromomethane	ND	0.000976	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dichlorobenzene	ND	0.000382	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,3-Dichlorobenzene	ND	0.000291	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,4-Dichlorobenzene	ND	0.000270	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Dichlorodifluoromethane	ND	0.000702	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1-Dichloroethane	ND	0.000402	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1-Dichloroethene	ND	0.000287	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dichloropropane	ND	0.000367	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,3-Dichloropropane	ND	0.000268	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2,2-Dichloropropane	ND	0.000299	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1-Dichloropropene	ND	0.000315	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Hexachlorobutadiene	ND	0.000347	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Isopropylbenzene	ND	0.000399	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
4-Isopropyltoluene	ND	0.000667	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Methylene chloride	0.000619	0.000425	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
n-Butylbenzene	ND	0.000706	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2-Hexanone	ND	0.000358	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
n-Propylbenzene	ND	0.000322	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
sec-Butylbenzene	0.000593	0.000434	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Styrene	ND	0.000285	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (4-6')
Collection Date: 4/28/2015 2:04:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000726	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
tert-Butylbenzene	ND	0.000263	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000280	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000378	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Tetrachloroethene (PCE)	ND	0.000341	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
trans-1,2-DCE	ND	0.000278	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
trans-1,3-Dichloropropene	ND	0.000225	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,3-Trichlorobenzene	ND	0.000629	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,4-Trichlorobenzene	ND	0.000644	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,1-Trichloroethane	ND	0.000245	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,2-Trichloroethane	ND	0.00172	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Trichloroethene (TCE)	ND	0.000342	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Trichlorofluoromethane	ND	0.000347	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,3-Trichloropropane	ND	0.000604	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Vinyl chloride	ND	0.000196	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032
Surr: 4-Bromofluorobenzene	113	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032
`urr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032
Surr: Toluene-d8	95.7	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (18-20')
Collection Date: 4/28/2015 2:14:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/1/2015 11:06:06 AM	18983
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/1/2015 11:06:06 AM	18983
Surr: DNOP	101	0	57.9-140		%REC	1	5/1/2015 11:06:06 AM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	3.6		mg/Kg-dr	1	5/1/2015 12:09:22 PM	R25904
Surr: BFB	89.0	0	80-120		%REC	1	5/1/2015 12:09:22 PM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	15	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0036	0.0034	0.039	J	mg/Kg-dr	1	5/6/2015 3:20:37 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.5	1.5	2.9	J	mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Arsenic	1.7	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Barium	170	0.035	0.12		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Beryllium	1.1	0.0086	0.17		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Chromium	16	0.070	0.35		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Cobalt	7.0	0.044	0.35		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Iron	23000	70	290		mg/Kg-dr	100	5/7/2015 10:53:17 AM	19080
Lead	2.0	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Manganese	480	0.14	0.23		mg/Kg-dr	2	5/7/2015 1:03:16 PM	19080
Nickel	16	0.15	0.58		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Vanadium	17	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Zinc	22	0.75	2.9		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Anthracene	ND	0.099	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benz(a)anthracene	ND	0.092	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (18-20')
Collection Date: 4/28/2015 2:14:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.089	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
enz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Dibenzofuran	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
3,3'-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachlorobutadiene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachlorocyclopentadiene	ND	0.081	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Isophorone	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (18-20')
Collection Date: 4/28/2015 2:14:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
idine	ND	0.098	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Surr: 2-Fluorophenol	62.8		26.4-129		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: Phenol-d5	62.6		34.8-118		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: 2,4,6-Tribromophenol	58.1		26.8-128		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: Nitrobenzene-d5	60.8		35.8-124		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: 2-Fluorobiphenyl	62.6		24.5-139		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: 4-Terphenyl-d14	62.5		29.4-129		%REC	1	5/7/2015 5:53:16 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0146	0.000447	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Toluene	0.00836	0.000206	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Ethylbenzene	0.00192	0.000334	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Xylenes, Total	0.00647	0.00118	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000832	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,4-Trimethylbenzene	0.00162	0.000519	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,3,5-Trimethylbenzene	0.000993	0.000348	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000532	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000237	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Naphthalene	ND	0.000649	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1-Methylnaphthalene	ND	0.000780	0.00397		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (18-20')
Collection Date: 4/28/2015 2:14:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000776	0.00397		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Acetone	0.00324	0.00124	0.00993	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromobenzene	ND	0.000552	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromodichloromethane	ND	0.000268	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromoform	ND	0.000514	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromomethane	ND	0.00117	0.00298		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2-Butanone	0.00156	0.000636	0.00993	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Carbon tetrachloride	ND	0.000359	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chlorobenzene	ND	0.000201	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chloroethane	ND	0.00199	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chloroform	ND	0.000409	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chloromethane	ND	0.000234	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2-Chlorotoluene	ND	0.000387	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Carbon disulfide	ND	0.000898	0.00993		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
4-Chlorotoluene	ND	0.000382	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
cis-1,2-DCE	ND	0.000525	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
cis-1,3-Dichloropropene	ND	0.00199	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Dibromo-3-chloropropane	ND	0.000583	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Dibromochloromethane	ND	0.000223	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Dibromomethane	ND	0.00113	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dichlorobenzene	ND	0.000441	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,3-Dichlorobenzene	ND	0.000336	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,4-Dichlorobenzene	ND	0.000312	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Dichlorodifluoromethane	ND	0.000811	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1-Dichloroethane	ND	0.000464	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1-Dichloroethene	ND	0.000331	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dichloropropane	ND	0.000424	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,3-Dichloropropane	ND	0.000309	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2,2-Dichloropropane	ND	0.000345	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1-Dichloropropene	ND	0.000364	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Hexachlorobutadiene	ND	0.000401	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Isopropylbenzene	ND	0.000461	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
4-Isopropyltoluene	ND	0.000770	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Methylene chloride	0.000566	0.000491	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
n-Butylbenzene	ND	0.000815	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2-Hexanone	ND	0.000413	0.00993		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
n-Propylbenzene	ND	0.000372	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
sec-Butylbenzene	0.000715	0.000501	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Styrene	ND	0.000329	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-1 (18-20')
Collection Date: 4/28/2015 2:14:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000838	0.00993		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
tert-Butylbenzene	ND	0.000304	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000323	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000437	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Tetrachloroethene (PCE)	ND	0.000394	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
trans-1,2-DCE	ND	0.000321	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
trans-1,3-Dichloropropene	ND	0.000260	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,3-Trichlorobenzene	ND	0.000726	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,4-Trichlorobenzene	ND	0.000744	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,1-Trichloroethane	ND	0.000282	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,2-Trichloroethane	ND	0.00199	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Trichloroethene (TCE)	ND	0.000394	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Trichlorofluoromethane	ND	0.000401	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,3-Trichloropropane	ND	0.000697	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Vinyl chloride	ND	0.000227	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Surr: 1,2-Dichloroethane-d4	94.3	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032
Surr: 4-Bromofluorobenzene	99.4	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032
Surr: Dibromofluoromethane	101	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032
Surr: Toluene-d8	87.0	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (2-4')
Collection Date: 4/28/2015 3:46:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	84	5.5	9.9		mg/Kg-dr	1	5/1/2015 2:20:08 PM	18983
Motor Oil Range Organics (MRO)	90	49	49		mg/Kg-dr	1	5/1/2015 2:20:08 PM	18983
Surr: DNOP	110	0	57.9-140		%REC	1	5/1/2015 2:20:08 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	3.5		mg/Kg-dr	1	5/1/2015 12:38:08 PM	R25904
Surr: BFB	89.7	0	80-120		%REC	1	5/1/2015 12:38:08 PM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	16	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.10	0.0036	0.040		mg/Kg-dr	1	5/6/2015 3:22:25 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Arsenic	2.3	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Barium	280	0.035	0.12		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Beryllium	0.88	0.0086	0.17		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Chromium	17	0.070	0.35		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Cobalt	5.0	0.044	0.35		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Iron	15000	70	290		mg/Kg-dr	100	5/7/2015 10:54:40 AM	19080
Lead	3.6	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Manganese	820	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:25:29 PM	19080
Nickel	8.9	0.15	0.58		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Vanadium	22	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Zinc	25	0.75	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.29	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Acenaphthylene	ND	0.24	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Aniline	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Anthracene	ND	0.20	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Azobenzene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benz(a)anthracene	ND	0.19	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(a)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(b)fluoranthene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(g,h,i)perylene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(k)fluoranthene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (2-4')
Collection Date: 4/28/2015 3:46:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.14	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzyl alcohol	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-chloroethoxy)methane	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-chloroethyl)ether	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.18	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-ethylhexyl)phthalate	0.29	0.27	1.2	J	mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Bromophenyl phenyl ether	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Butyl benzyl phthalate	ND	0.29	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Carbazole	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Chloro-3-methylphenol	ND	0.24	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Chloroaniline	ND	0.22	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Chloronaphthalene	ND	0.25	0.59		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Chlorophenol	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Chlorophenyl phenyl ether	ND	0.35	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Chrysene	ND	0.24	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Di-n-butyl phthalate	ND	0.27	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Di-n-octyl phthalate	ND	0.26	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
enz(a,h)anthracene	ND	0.26	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
enzofuran	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,2-Dichlorobenzene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,3-Dichlorobenzene	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,4-Dichlorobenzene	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
3,3'-Dichlorobenzidine	ND	0.18	0.59		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Diethyl phthalate	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Dimethyl phthalate	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dichlorophenol	ND	0.24	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dimethylphenol	ND	0.19	0.71		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.13	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dinitrophenol	ND	0.098	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dinitrotoluene	ND	0.21	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,6-Dinitrotoluene	ND	0.26	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Fluoranthene	ND	0.29	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Fluorene	ND	0.32	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachlorobenzene	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachlorobutadiene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachlorocyclopentadiene	ND	0.16	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachloroethane	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Isophorone	ND	0.25	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (2-4')
Collection Date: 4/28/2015 3:46:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Methylphenol	ND	0.24	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
3+4-Methylphenol	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
N-Nitrosodi-n-propylamine	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
N-Nitrosodiphenylamine	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Naphthalene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Nitroaniline	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
3-Nitroaniline	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Nitroaniline	ND	0.21	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Nitrobenzene	ND	0.24	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Nitrophenol	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Nitrophenol	ND	0.20	0.59		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Pentachlorophenol	ND	0.15	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Phenanthrene	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Phenol	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Pyrene	ND	0.31	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
idine	ND	0.20	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
.,2,4-Trichlorobenzene	ND	0.24	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4,5-Trichlorophenol	ND	0.28	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4,6-Trichlorophenol	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Surr: 2-Fluorophenol	52.2		26.4-129		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: Phenol-d5	52.1		34.8-118		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: 2,4,6-Tribromophenol	52.8		26.8-128		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: Nitrobenzene-d5	49.1		35.8-124		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: 2-Fluorobiphenyl	52.1		24.5-139		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: 4-Terphenyl-d14	56.7		29.4-129		%REC	1	5/7/2015 6:21:19 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.000872	0.000336	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Toluene	0.00116	0.000155	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Ethylbenzene	0.000313	0.000251	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Xylenes, Total	0.00108	0.000889	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000625	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,4-Trimethylbenzene	ND	0.000389	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,3,5-Trimethylbenzene	ND	0.000261	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000399	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000178	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Naphthalene	ND	0.000487	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1-Methylnaphthalene	ND	0.000585	0.00298		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (2-4')
Collection Date: 4/28/2015 3:46:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000582	0.00298		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Acetone	0.0201	0.000931	0.00745		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromobenzene	ND	0.000415	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromodichloromethane	ND	0.000201	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromoform	ND	0.000386	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromomethane	ND	0.000881	0.00224		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2-Butanone	0.00273	0.000477	0.00745	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Carbon tetrachloride	ND	0.000270	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chlorobenzene	ND	0.000151	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chloroethane	ND	0.00149	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chloroform	ND	0.000307	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chloromethane	ND	0.000176	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2-Chlorotoluene	ND	0.000291	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Carbon disulfide	ND	0.000674	0.00745		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
4-Chlorotoluene	ND	0.000287	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
cis-1,2-DCE	ND	0.000394	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
cis-1,3-Dichloropropene	ND	0.00149	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
·Dibromo-3-chloropropane	ND	0.000438	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
..ıbromochloromethane	ND	0.000167	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Dibromomethane	ND	0.000846	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dichlorobenzene	ND	0.000331	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,3-Dichlorobenzene	ND	0.000253	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,4-Dichlorobenzene	ND	0.000234	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Dichlorodifluoromethane	ND	0.000608	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1-Dichloroethane	ND	0.000348	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1-Dichloroethene	ND	0.000249	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dichloropropane	ND	0.000318	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,3-Dichloropropane	ND	0.000232	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2,2-Dichloropropane	ND	0.000259	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1-Dichloropropene	ND	0.000273	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Hexachlorobutadiene	ND	0.000301	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Isopropylbenzene	ND	0.000346	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
4-Isopropyltoluene	ND	0.000578	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Methylene chloride	0.000387	0.000368	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
n-Butylbenzene	ND	0.000612	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2-Hexanone	0.000656	0.000310	0.00745	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
n-Propylbenzene	ND	0.000279	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
sec-Butylbenzene	ND	0.000376	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Styrene	ND	0.000247	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (2-4')
Collection Date: 4/28/2015 3:46:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000629	0.00745		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
tert-Butylbenzene	ND	0.000228	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000242	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000328	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Tetrachloroethene (PCE)	ND	0.000295	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
trans-1,2-DCE	ND	0.000241	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
trans-1,3-Dichloropropene	ND	0.000195	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,3-Trichlorobenzene	ND	0.000545	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,4-Trichlorobenzene	ND	0.000558	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,1-Trichloroethane	ND	0.000212	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,2-Trichloroethane	ND	0.00149	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Trichloroethene (TCE)	ND	0.000296	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Trichlorofluoromethane	ND	0.000301	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,3-Trichloropropane	ND	0.000523	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Vinyl chloride	ND	0.000170	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Surr: 1,2-Dichloroethane-d4	96.2	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032
Surr: Dibromofluoromethane	99.4	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032
Surr: Toluene-d8	89.8	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (6-8')
Collection Date: 4/28/2015 3:57:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	42	5.5	9.9		mg/Kg-dr	1	5/1/2015 2:47:10 PM	18983
Motor Oil Range Organics (MRO)	69	50	50		mg/Kg-dr	1	5/1/2015 2:47:10 PM	18983
Surr: DNOP	113	0	57.9-140		%REC	1	5/1/2015 2:47:10 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.98	3.3		mg/Kg-dr	1	5/1/2015 1:06:50 PM	R25904
Surr: BFB	91.6	0	80-120		%REC	1	5/1/2015 1:06:50 PM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	19	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.087	0.0037	0.042		mg/Kg-dr	1	5/6/2015 3:24:12 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.1	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Arsenic	2.6	0.69	5.9	J	mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Barium	2900	0.35	1.2		mg/Kg-dr	10	5/8/2015 2:27:08 PM	19080
Beryllium	0.92	0.017	0.35		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Cadmium	ND	0.066	0.24		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Chromium	29	0.14	0.71		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Cobalt	6.4	0.089	0.71		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Iron	13000	71	300		mg/Kg-dr	100	5/7/2015 10:56:03 AM	19080
Lead	5.6	0.26	0.59		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Manganese	1000	0.69	1.2		mg/Kg-dr	10	5/8/2015 2:27:08 PM	19080
Nickel	10	0.30	1.2		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Selenium	ND	3.6	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Silver	ND	0.070	0.59		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Vanadium	23	0.079	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Zinc	35	1.5	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Acenaphthylene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Aniline	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Azobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benz(a)anthracene	ND	0.097	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(a)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(b)fluoranthene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (6-8')
Collection Date: 4/28/2015 3:57:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.070	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzyl alcohol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-chloroethoxy)methane	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.094	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Butyl benzyl phthalate	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Carbazole	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Chloroaniline	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Chloronaphthalene	ND	0.13	0.31		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Chlorophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Chlorophenyl phenyl ether	ND	0.18	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Chrysene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Di-n-butyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Di-n-octyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
enz(a,h)anthracene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
enzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
3,3'-Dichlorobenzidine	ND	0.095	0.31		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Diethyl phthalate	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Dimethyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dichlorophenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dimethylphenol	ND	0.097	0.37		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.067	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dinitrophenol	ND	0.051	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,6-Dinitrotoluene	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Fluoranthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Fluorene	ND	0.17	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachlorobutadiene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachlorocyclopentadiene	ND	0.085	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Isophorone	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (6-8')
Collection Date: 4/28/2015 3:57:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Methylphenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
3+4-Methylphenol	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
N-Nitrosodi-n-propylamine	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
3-Nitroaniline	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Nitroaniline	ND	0.11	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Nitrophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Nitrophenol	ND	0.11	0.31		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Pentachlorophenol	ND	0.077	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Phenanthrene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Phenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Pyrene	ND	0.16	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
idine	ND	0.10	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
.,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Surr: 2-Fluorophenol	68.7		26.4-129		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: Phenol-d5	72.7		34.8-118		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: 2,4,6-Tribromophenol	68.5		26.8-128		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: Nitrobenzene-d5	62.6		35.8-124		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: 2-Fluorobiphenyl	64.8		24.5-139		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: 4-Terphenyl-d14	64.6		29.4-129		%REC	1	5/7/2015 6:49:18 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00319	0.000368	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Toluene	0.00301	0.000170	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Ethylbenzene	0.000800	0.000275	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Xylenes, Total	0.00181	0.000974	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000685	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,4-Trimethylbenzene	0.000564	0.000427	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,3,5-Trimethylbenzene	0.000351	0.000287	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000438	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000195	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Naphthalene	ND	0.000534	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1-Methylnaphthalene	ND	0.000641	0.00327		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (6-8')
Collection Date: 4/28/2015 3:57:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000638	0.00327		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Acetone	0.00534	0.00102	0.00817	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromobenzene	ND	0.000454	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromodichloromethane	ND	0.000221	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromoform	ND	0.000423	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromomethane	ND	0.000966	0.00245		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2-Butanone	0.00136	0.000523	0.00817	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Carbon tetrachloride	ND	0.000296	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chlorobenzene	ND	0.000166	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chloroethane	ND	0.00163	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chloroform	ND	0.000336	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chloromethane	ND	0.000193	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2-Chlorotoluene	ND	0.000319	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Carbon disulfide	ND	0.000739	0.00817		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
4-Chlorotoluene	ND	0.000315	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
cis-1,2-DCE	ND	0.000432	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
cis-1,3-Dichloropropene	ND	0.00163	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
`-Dibromo-3-chloropropane	ND	0.000480	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
..ıromochloromethane	ND	0.000183	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Dibromomethane	ND	0.000927	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dichlorobenzene	ND	0.000362	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,3-Dichlorobenzene	ND	0.000277	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,4-Dichlorobenzene	ND	0.000256	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Dichlorodifluoromethane	ND	0.000667	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1-Dichloroethane	ND	0.000382	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1-Dichloroethene	ND	0.000273	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dichloropropane	ND	0.000349	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,3-Dichloropropane	ND	0.000254	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2,2-Dichloropropane	ND	0.000284	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1-Dichloropropene	ND	0.000299	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Hexachlorobutadiene	ND	0.000330	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Isopropylbenzene	ND	0.000379	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
4-Isopropyltoluene	ND	0.000634	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Methylene chloride	0.000547	0.000404	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
n-Butylbenzene	ND	0.000671	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2-Hexanone	0.000588	0.000340	0.00817	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
n-Propylbenzene	ND	0.000306	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
sec-Butylbenzene	0.000555	0.000413	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Styrene	ND	0.000271	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (6-8')
Collection Date: 4/28/2015 3:57:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000690	0.00817		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
tert-Butylbenzene	ND	0.000250	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000266	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000359	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Tetrachloroethene (PCE)	ND	0.000324	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
trans-1,2-DCE	ND	0.000264	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
trans-1,3-Dichloropropene	ND	0.000214	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,3-Trichlorobenzene	ND	0.000598	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,4-Trichlorobenzene	ND	0.000612	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,1-Trichloroethane	ND	0.000232	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,2-Trichloroethane	ND	0.00163	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Trichloroethene (TCE)	ND	0.000325	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Trichlorofluoromethane	ND	0.000330	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,3-Trichloropropane	ND	0.000573	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Vinyl chloride	ND	0.000187	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Surr: 1,2-Dichloroethane-d4	99.3	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032
Surr: 4-Bromofluorobenzene	89.3	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032
Surr: Dibromofluoromethane	99.0	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032
Surr: Toluene-d8	92.0	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (18-20')
Collection Date: 4/28/2015 4:07:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.9		mg/Kg-dr	1	5/1/2015 12:27:28 PM	18983
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/1/2015 12:27:28 PM	18983
Surr: DNOP	107	0	57.9-140		%REC	1	5/1/2015 12:27:28 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.1	3.6		mg/Kg-dr	1	5/1/2015 1:35:34 PM	R25904
Surr: BFB	90.2	0	80-120		%REC	1	5/1/2015 1:35:34 PM	R25904
PERCENT MOISTURE							Analyst: **cadg**	
Percent Moisture	17	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0049	0.0032	0.037	J	mg/Kg-dr	1	5/6/2015 3:26:01 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Arsenic	2.1	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Barium	750	0.18	0.60		mg/Kg-dr	5	5/8/2015 2:28:47 PM	19080
Beryllium	1.1	0.0089	0.18		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Chromium	14	0.072	0.36		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Cobalt	8.8	0.045	0.36		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Iron	22000	72	300		mg/Kg-dr	100	5/7/2015 11:02:21 AM	19080
Lead	1.9	0.13	0.30		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Manganese	1200	0.35	0.60		mg/Kg-dr	5	5/8/2015 2:28:47 PM	19080
Nickel	16	0.15	0.60		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Vanadium	16	0.040	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Zinc	27	0.77	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.15	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benz(a)anthracene	ND	0.095	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(a)pyrene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (18-20')
Collection Date: 4/28/2015 4:07:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.069	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzyl alcohol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.092	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Butyl benzyl phthalate	ND	0.15	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Chloroaniline	ND	0.11	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Di-n-butyl phthalate	ND	0.14	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Di-n-octyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
enz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
enzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
3,3'-Dichlorobenzidine	ND	0.093	0.30		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Diethyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dichlorophenol	ND	0.12	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dimethylphenol	ND	0.095	0.36		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.065	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dinitrophenol	ND	0.050	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Fluoranthene	ND	0.15	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachlorocyclopentadiene	ND	0.083	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (18-20')
Collection Date: 4/28/2015 4:07:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Methylphenol	ND	0.12	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Nitroaniline	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
3-Nitroaniline	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Nitroaniline	ND	0.11	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Pentachlorophenol	ND	0.075	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Phenanthrene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Pyrene	ND	0.16	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
'dine	ND	0.10	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
.,_,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Surr: 2-Fluorophenol	72.6		26.4-129		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: Phenol-d5	71.3		34.8-118		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: 2,4,6-Tribromophenol	69.6		26.8-128		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: Nitrobenzene-d5	65.6		35.8-124		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: 2-Fluorobiphenyl	67.9		24.5-139		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: 4-Terphenyl-d14	68.3		29.4-129		%REC	1	5/7/2015 7:17:20 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0141	0.000489	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Toluene	0.0100	0.000226	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Ethylbenzene	0.00231	0.000365	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Xylenes, Total	0.00707	0.00129	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000909	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,4-Trimethylbenzene	0.00184	0.000567	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,3,5-Trimethylbenzene	0.00123	0.000380	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000581	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000259	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Naphthalene	ND	0.000709	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1-Methylnaphthalene	ND	0.000852	0.00434		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (18-20')
Collection Date: 4/28/2015 4:07:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000848	0.00434		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Acetone	0.00158	0.00135	0.0108	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromobenzene	ND	0.000603	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromodichloromethane	ND	0.000293	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromoform	ND	0.000562	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromomethane	ND	0.00128	0.00325		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2-Butanone	0.00151	0.000695	0.0108	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Carbon tetrachloride	ND	0.000393	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chlorobenzene	ND	0.000220	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chloroethane	ND	0.00217	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chloroform	ND	0.000447	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chloromethane	ND	0.000256	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2-Chlorotoluene	ND	0.000423	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Carbon disulfide	ND	0.000982	0.0108		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
4-Chlorotoluene	ND	0.000418	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
cis-1,2-DCE	ND	0.000574	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
cis-1,3-Dichloropropene	ND	0.00217	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
-Dibromo-3-chloropropane	ND	0.000637	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
..ɔromochloromethane	ND	0.000243	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Dibromomethane	ND	0.00123	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dichlorobenzene	ND	0.000481	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,3-Dichlorobenzene	ND	0.000368	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,4-Dichlorobenzene	ND	0.000341	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Dichlorodifluoromethane	ND	0.000886	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1-Dichloroethane	ND	0.000507	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1-Dichloroethene	ND	0.000362	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dichloropropane	ND	0.000463	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,3-Dichloropropane	ND	0.000338	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2,2-Dichloropropane	ND	0.000377	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1-Dichloropropene	ND	0.000397	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Hexachlorobutadiene	ND	0.000438	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Isopropylbenzene	ND	0.000503	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
4-Isopropyltoluene	ND	0.000842	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Methylene chloride	0.000770	0.000536	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
n-Butylbenzene	ND	0.000890	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2-Hexanone	0.000748	0.000451	0.0108	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
n-Propylbenzene	ND	0.000406	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
sec-Butylbenzene	0.000781	0.000548	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Styrene	ND	0.000359	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1504C87-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-3 (18-20')
Collection Date: 4/28/2015 4:07:00 PM
Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000916	0.0108		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
tert-Butylbenzene	ND	0.000332	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000353	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000477	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Tetrachloroethene (PCE)	ND	0.000430	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
trans-1,2-DCE	ND	0.000351	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
trans-1,3-Dichloropropene	ND	0.000284	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,3-Trichlorobenzene	ND	0.000794	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,4-Trichlorobenzene	ND	0.000813	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,1-Trichloroethane	ND	0.000309	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,2-Trichloroethane	ND	0.00217	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Trichloroethene (TCE)	ND	0.000431	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Trichlorofluoromethane	ND	0.000438	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,3-Trichloropropane	ND	0.000762	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Vinyl chloride	ND	0.000248	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Surr: 1,2-Dichloroethane-d4	87.0	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032
Surr: 4-Bromofluorobenzene	98.1	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032
Surr: Dibromofluoromethane	92.3	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032
Surr: Toluene-d8	94.3	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-01

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-001D SWMU 10-1 2-4FT

Project # :

Collected By :
Collection Date : 04/28/15 13:53

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/03/15	1
ORP	60.		mV	2580 B-2011	05/06/15	1
pH	7.8	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-01 (PH) - 7.8 at 21.2c

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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-02

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-002D SWMU 10-1 4-6FT

Project # :

Collected By :
Collection Date : 04/28/15 14:04

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/03/15	1
ORP	40.		mV	2580 B-2011	05/06/15	1
pH	8.3	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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L762539-02 (PH) - 8.3 at 20.7c

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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-03

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-003D SWMU 10-1 18-20FT

Project # :

Collected By :
Collection Date : 04/28/15 14:14

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/03/15	1
ORP	10.		mV	2580 B-2011	05/06/15	1
pH	8.9	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-03 (PH) - 8.9 at 20.8c

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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-04

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-004D SWMU 10-3 2-4FT

Project # :

Collected By :
Collection Date : 04/28/15 15:46

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/04/15	1
ORP	60.		mV	2580 B-2011	05/06/15	1
pH	7.6	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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L762539-04 (PH) - 7.6 at 21.0c

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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
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ESC Sample # : L762539-05

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-005D SWMU 10-3 6-8FT

Project # :

Collected By :
Collection Date : 04/28/15 15:57

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/04/15	1
ORP	100		mV	2580 B-2011	05/07/15	1
pH	7.6	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-05 (PH) - 7.6 at 21.8c

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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-06

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-006D SWMU 10-3 18-20FT

Project # :

Collected By :
Collection Date : 04/28/15 16:07

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/04/15	1
ORP	70.		mV	2580 B-2011	05/07/15	1
pH	9.1	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-06 (PH) - 9.1 at 21.5c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762539

May 14, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG786207	05/03/15 07:48
Chromium,Hexavalent	< 2	mg/kg			WG786350	05/04/15 11:50
Cyanide	< .25	mg/kg			WG786337	05/04/15 15:52

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L762539-03	WG786207
Chromium,Hexavalent	mg/kg	110.	110.	0.0	20	L762612-07	WG786350
Cyanide	mg/kg	0.0	0.0	0.0	20	L762539-02	WG786337
Cyanide	mg/kg	0.0	0.0	0.0	20	L762653-05	WG786337
pH	su	7.70	7.70	0.389	1	L762509-58	WG786356
pH	su	8.20	8.20	0.367	1	L762612-03	WG786356
ORP	mV	100.	100.	0.0	20	L762171-02	WG786855
ORP	mV	60.0	60.0	0.0	20	L762539-04	WG786855
ORP	mV	100.	100.	0.0	20	L762539-05	WG787164
ORP	mV	150.	150.	0.0	20	L762970-01	WG787164

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chromium,Hexavalent	mg/kg	59.8	67.0	112.	80-120	WG786207
Chromium,Hexavalent	mg/kg	59.8	57.4	96.0	80-120	WG786350
Cyanide	mg/kg	101	108.	107.	50-150	WG786337
pH	su	7.84	7.79	99.4	98.3-101.7	WG786356
ORP	mV	100	108.	108.	90-110	WG786855
ORP	mV	100	105.	105.	90-110	WG787164

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chromium,Hexavalent	mg/kg	67.0	67.0	112.	80-120	0.0	20	WG786207
Chromium,Hexavalent	mg/kg	57.2	57.4	96.0	80-120	0.349	20	WG786350

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762539

May 14, 2015

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/kg	108.	108.	107.	50-150	0.0	20	WG786337
pH	su	7.79	7.79	99.0	98.3-101.7	0.0	20	WG786356
ORP	mV	108.	108.	108.	90-110	0.0	20	WG786855
ORP	mV	105.	105.	105.	90-110	0.0	20	WG787164

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	21.8	0.0	20	110.	75-125	L762539-03	WG786207
Chromium,Hexavalent	mg/kg	155.	110.	20	110.	75-125	L762612-07	WG786350
Cyanide	mg/kg	3.07	0.0	3.33	92.0	80-120	L762539-06	WG786337

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	22.1	21.8	110.	75-125	1.37	20	L762539-03	WG786207
romium,Hexavalent	mg/kg	155.	155.	112.	75-125	0.0	20	L762612-07	WG786350
Cyanide	mg/kg	3.20	3.07	96.1	80-120	4.15	20	L762539-06	WG786337

Batch number /Run number / Sample number cross reference

WG786207: R3034617: L762539-01 02 03
WG786350: R3034796: L762539-04 05 06
WG786337: R3034851: L762539-01 02 03 04 05 06
WG786356: R3035082: L762539-01 02 03 04 05 06
WG786855: R3035486: L762539-01 02 03 04
WG787164: R3035850: L762539-05 06

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-18983**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **18983**	RunNo: **25903**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767810** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	13		10.00		131	57.9	140			

Sample ID **LCS-18983**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **18983**	RunNo: **25903**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767811** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	62	10	50.00	0	124	67.8	130			
Surr: DNOP	6.2		5.000		125	57.9	140			

Sample ID **1504C87-001CMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU 10-1 (2-4')**	Batch ID: **18983**	RunNo: **25903**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767969** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible] Range Organics (DRO)	120	9.7	48.69	92.77	60.1	42.3	146			
[illegible]: DNOP	5.2		4.869		107	57.9	140			

Sample ID **1504C87-001CMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SWMU 10-1 (2-4')**	Batch ID: **18983**	RunNo: **25903**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767979** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	130	9.7	48.59	92.77	73.6	42.3	146	5.17	28.9	
Surr: DNOP	5.2		4.859		107	57.9	140	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **R25904**	RunNo: **25904**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768086** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.3	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R25904**	RunNo: **25904**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768087** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	64	130			
Surr: BFB	980		1000		98.2	80	120			

Sample ID **1504C87-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-1 (2-4')**	Batch ID: **R25904**	RunNo: **25904**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768089** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.5	17.25	0	99.3	47.9	144			
Surr: BFB	680		690.0		98.5	80	120			

Sample ID **1504C87-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-1 (2-4')**	Batch ID: **R25904**	RunNo: **25904**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768090** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.5	17.25	0	97.7	47.9	144	1.62	29.9	
Surr: BFB	680		690.0		99.2	80	120	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
[illegible] disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
· richlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **R25982** RunNo: **25982**
Prep Date: Analysis Date: **5/5/2015** SeqNo: **770975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Sample ID **1504c87-001a ms** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU 10-1 (2-4')** Batch ID: **R25982** RunNo: **25982**
Prep Date: Analysis Date: **5/5/2015** SeqNo: **770977** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.71	0.035	0.6900	0	103	57.8	132			
Toluene	0.65	0.035	0.6900	0	93.6	54.8	139			
Chlorobenzene	0.72	0.035	0.6900	0	104	63.5	134			
1,1-Dichloroethene	0.89	0.035	0.6900	0	128	26.4	145			
Trichloroethene (TCE)	0.66	0.035	0.6900	0	96.3	54.9	125			
Surr: Dibromofluoromethane	0.36		0.3450		104	70	130			
Surr: 1,2-Dichloroethane-d4	0.31		0.3450		90.8	70	130			
Surr: Toluene-d8	0.31		0.3450		90.6	70	130			
Surr: 4-Bromofluorobenzene	0.31		0.3450		89.6	70	130			

Sample ID **1504c87-001a msd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU 10-1 (2-4')** Batch ID: **R25982** RunNo: **25982**
Prep Date: Analysis Date: **5/5/2015** SeqNo: **770978** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.69	0.035	0.6900	0	100	57.8	132	2.81	20	
Toluene	0.65	0.035	0.6900	0	93.6	54.8	139	0.0192	20	
Chlorobenzene	0.68	0.035	0.6900	0	98.0	63.5	134	6.11	20	
1,1-Dichloroethene	0.81	0.035	0.6900	0	117	26.4	145	9.25	20	
Trichloroethene (TCE)	0.60	0.035	0.6900	0	87.6	54.9	125	9.54	20	
Surr: Dibromofluoromethane	0.35		0.3450		102	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.31		0.3450		90.4	70	130	0	0	
Surr: Toluene-d8	0.32		0.3450		91.9	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.32		0.3450		92.6	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19032**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771128** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**	
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**	
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**		TestCode: **Method 8260B/5035LOW: VOLATILES**		
Client ID: **PBS**	Batch ID: **19032**		RunNo: **26013**		
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**		SeqNo: **771129**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
enzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**	
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
' aniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**
05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19026** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS** Batch ID: **19026** RunNo: **26053**
Prep Date: **5/4/2015** Analysis Date: **5/7/2015** SeqNo: **772521** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.20	1.670	0	88.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.8	52.3	122			
2-Chlorophenol	2.6	0.20	3.330	0	77.2	49.9	115			
1,4-Dichlorobenzene	1.4	0.20	1.670	0	84.4	43.7	107			
2,4-Dinitrotoluene	1.3	0.50	1.670	0	77.6	36	106			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.3	39.5	110			
4-Nitrophenol	3.0	0.25	3.330	0	90.2	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	73.7	23.7	111			
Phenol	2.9	0.20	3.330	0	86.4	52.7	119			
Pyrene	1.3	0.20	1.670	0	76.9	50.4	116			
1,2,4-Trichlorobenzene	1.6	0.20	1.670	0	98.3	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Sample ID **1504C87-001Cms** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-1 (2-4')** Batch ID: **19026** RunNo: **26053**
Prep Date: **5/4/2015** Analysis Date: **5/7/2015** SeqNo: **772523** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.25	2.061	0	72.9	36.3	121			
4-Chloro-3-methylphenol	3.4	0.62	4.110	0	81.7	48.2	119			
2-Chlorophenol	2.8	0.25	4.110	0	68.4	37.2	114			
1,4-Dichlorobenzene	1.3	0.25	2.061	0	65.5	28.8	106			
2,4-Dinitrotoluene	1.4	0.62	2.061	0	66.5	34.6	111			
N-Nitrosodi-n-propylamine	1.7	0.25	2.061	0	80.6	32.7	117			
4-Nitrophenol	3.2	0.31	4.110	0	77.1	30.1	134			
Pentachlorophenol	3.1	0.49	4.110	0.1602	70.7	24	120			
Phenol	3.3	0.25	4.110	0	79.2	38.3	118			
Pyrene	1.6	0.25	2.061	0	79.6	38.3	134			
1,2,4-Trichlorobenzene	1.6	0.25	2.061	0	79.0	31.8	110			
Surr: 2-Fluorophenol	3.2		4.110		77.9	26.4	129			
Surr: Phenol-d5	3.3		4.110		79.4	34.8	118			
Surr: 2,4,6-Tribromophenol	3.9		4.110		95.3	26.8	128			
Surr: Nitrobenzene-d5	1.5		2.061		75.2	35.8	124			
Surr: 2-Fluorobiphenyl	1.6		2.061		75.6	24.5	139			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1504C87-001Cms	SampType:	MS	TestCode:	EPA Method 8270C: Semivolatiles
Client ID:	SWMU 10-1 (2-4')	Batch ID:	19026	RunNo:	26053
Prep Date:	5/4/2015	Analysis Date:	5/7/2015	SeqNo:	772523
				Units:	mg/Kg-dry

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.9		2.061		94.6	29.4	129			

Sample ID	1504C87-001Cmsd	SampType:	MSD	TestCode:	EPA Method 8270C: Semivolatiles
Client ID:	SWMU 10-1 (2-4')	Batch ID:	19026	RunNo:	26053
Prep Date:	5/4/2015	Analysis Date:	5/7/2015	SeqNo:	772524
				Units:	mg/Kg-dry

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.25	2.067	0	69.4	36.3	121	4.64	25.4	
4-Chloro-3-methylphenol	3.3	0.62	4.122	0	80.2	48.2	119	1.57	30.4	
2-Chlorophenol	2.6	0.25	4.122	0	63.2	37.2	114	7.60	33.4	
1,4-Dichlorobenzene	1.3	0.25	2.067	0	62.8	28.8	106	3.81	20.9	
2,4-Dinitrotoluene	1.3	0.62	2.067	0	62.8	34.6	111	5.41	27.9	
N-Nitrosodi-n-propylamine	1.5	0.25	2.067	0	72.4	32.7	117	10.5	27.5	
4-Nitrophenol	3.2	0.31	4.122	0	76.9	30.1	134	0.104	33.7	
Pentachlorophenol	3.1	0.50	4.122	0.1602	71.0	24	120	0.688	39.7	
Phenol	3.0	0.25	4.122	0	72.4	38.3	118	8.63	30.1	
Pyrene	1.5	0.25	2.067	0	72.0	38.3	134	9.71	22.7	
1,2,4-Trichlorobenzene	1.5	0.25	2.067	0	74.1	31.8	110	6.12	27.8	
Surr: 2-Fluorophenol	2.8		4.122		68.8	26.4	129	0	0	
Surr: Phenol-d5	3.0		4.122		73.5	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	4.0		4.122		97.8	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.5		2.067		72.1	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.5		2.067		71.2	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.8		2.067		85.2	29.4	129	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19078	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury						
Client ID:	PBS	Batch ID:	19078	RunNo:	26010						
Prep Date:	5/6/2015	Analysis Date:	5/6/2015	SeqNo:	771069	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.033								

Sample ID	LCS-19078	SampType:	LCS	TestCode:	EPA Method 7471: Mercury						
Client ID:	LCSS	Batch ID:	19078	RunNo:	26010						
Prep Date:	5/6/2015	Analysis Date:	5/6/2015	SeqNo:	771070	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.17	0.033	0.1667	0	103	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1504C87**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19080**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **19080**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772227** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	0.13	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	0.74	2.5								J

Sample ID **LCS-19080**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
t ID: **LCSS**	Batch ID: **19080**	RunNo: **26050**
Prep Date: **5/6/2015**	Analysis Date: **5/7/2015**	SeqNo: **772228** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	103	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	27	0.15	25.00	0	107	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	99.2	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	99.4	80	120			
Silver	5.4	0.25	5.000	0	107	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1504C87** RcptNo: **1**

Received by/date: 04/29/15

Logged By: **Ashley Gallegos** **4/29/2015 4:00:00 PM**

Completed By: **Ashley Gallegos** **4/30/2015 11:48:30 AM**

Reviewed By: 04/30/15

Chain of Custody

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

Log In

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

Special Handling (If applicable)

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

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504C87	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
28.15	1353	SOIL	SWMU 10-1(2-4')	JARS-2	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					
	1404	SOIL	SWMU 10-1(4-6')	JARS-2	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					
	1414	SOIL	SWMU 10-1(18-20')	JARS-2	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/29/15	7:22	[signature]	[signature]	4/29/15	7:20
4/29/15	1600	[signature]	[signature]	04/29/15	1600

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain of Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.5

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504C87	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4-28-15	1546	SOIL	SWMU 10-3 (2-4')	JARS-2	NEAT	-004			✓							✓	✓	✓			
↓	↓	↓	↓	VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					
	1557	SOIL	SWMU 10-3 (6-8')	JARS-2	NEAT	-005			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					
	1607	SOIL	SWMU 10-3 (18-20')	JARS-2	NEAT	-006			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH											✓					
↓	↓	↓	↓	VIALS-2	SOBI											✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/29/15	0723			4/29/15	720
Date:	Time:	Relinquished by:	Received by:	Date	Time
				04/29/15	1600

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
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Website: www.hallenvironmental.com

October 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505001

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 05, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505001-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-1-GW
Collection Date: 4/29/2015 5:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 6:25:02 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 6:25:02 PM	18985
Surr: DNOP	109	0	76.5-150		%REC	1	5/1/2015 6:25:02 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 5:29:47 PM	R25939
Surr: BFB	106	0	80-120		%REC	1	5/4/2015 5:29:47 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.58	2.0		mg/L	20	5/1/2015 12:05:38 PM	R25920
Chloride	3600	67	250		mg/L	500	5/6/2015 8:14:26 PM	R26026
Sulfate	340	2.3	10		mg/L	20	5/1/2015 12:05:38 PM	R25920
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.45	0.00095	0.0020		mg/L	1	5/6/2015 6:49:37 PM	R26030
Beryllium	ND	0.00031	0.0020		mg/L	1	5/6/2015 6:49:37 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:49:37 PM	R26030
Chromium	ND	0.0018	0.0060		mg/L	1	5/6/2015 6:49:37 PM	R26030
Cobalt	0.0084	0.0013	0.0060		mg/L	1	5/6/2015 6:49:37 PM	R26030
[illegible]	0.58	0.0073	0.020	*	mg/L	1	5/6/2015 6:49:37 PM	R26030
Manganese	0.93	0.00027	0.0020	*	mg/L	1	5/6/2015 6:49:37 PM	R26030
Nickel	0.21	0.0021	0.010	*	mg/L	1	5/6/2015 6:49:37 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:49:37 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/6/2015 6:49:37 PM	R26030
Zinc	0.029	0.0028	0.010		mg/L	1	5/6/2015 6:49:37 PM	R26030
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.74	0.00095	0.0020		mg/L	1	5/5/2015 5:25:11 PM	19025
Beryllium	0.0024	0.00031	0.0020		mg/L	1	5/5/2015 5:25:11 PM	19025
Cadmium	ND	0.00097	0.0020		mg/L	1	5/5/2015 5:25:11 PM	19025
Chromium	0.013	0.0022	0.0060		mg/L	1	5/5/2015 5:25:11 PM	19025
Cobalt	0.012	0.0013	0.0060		mg/L	1	5/5/2015 5:25:11 PM	19025
Iron	16	0.36	1.0	*	mg/L	50	5/6/2015 4:49:53 PM	19025
Manganese	1.2	0.0076	0.010	*	mg/L	5	5/6/2015 4:44:00 PM	19025
Nickel	0.19	0.0023	0.010	*	mg/L	1	5/5/2015 5:25:11 PM	19025
Silver	ND	0.0021	0.0050		mg/L	1	5/5/2015 5:25:11 PM	19025
Vanadium	ND	0.0015	0.050		mg/L	1	5/5/2015 5:25:11 PM	19025
Zinc	0.071	0.0036	0.010		mg/L	1	5/6/2015 4:42:01 PM	19025
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.00029	0.0020		mg/L	2	5/11/2015 2:28:51 PM	R26119
Arsenic	ND	0.0013	0.020		mg/L	20	5/12/2015 4:56:55 PM	R26138

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505001-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-1-GW
Collection Date: 4/29/2015 5:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	ND	0.000053	0.0020		mg/L	2	5/11/2015 2:28:51 PM	R26119
Selenium	0.030	0.0039	0.020		mg/L	20	5/12/2015 4:56:55 PM	R26138
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	0.0011	0.00022	0.0010		mg/L	1	5/8/2015 1:27:40 PM	19025
Arsenic	ND	0.0058	0.020		mg/L	20	5/15/2015 12:08:55 PM	19025
Lead	0.017	0.000069	0.0010	*	mg/L	1	5/8/2015 1:27:40 PM	19025
Selenium	ND	0.0097	0.050		mg/L	50	5/15/2015 12:28:41 PM	19025
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:20:16 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
[illegible]nz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
[illegible]zo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505001-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-1-GW
Collection Date: 4/29/2015 5:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
achlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
exachloroethane	ND	1.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 9:03:51 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505001-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-1-GW
Collection Date: 4/29/2015 5:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Surr: 2-Fluorophenol	33.0	0	14.9-111		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: Phenol-d5	33.2	0	11.3-108		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: 2,4,6-Tribromophenol	40.5	0	15.7-154		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: Nitrobenzene-d5	73.6	0	47.8-106		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: 2-Fluorobiphenyl	68.1	0	21.3-123		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: 4-Terphenyl-d14	69.5	0	14.3-135		%REC	1	5/5/2015 9:03:51 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	4.7	0.065	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Methyl tert-butyl ether (MTBE)	6.1	0.17	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505001-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-1-GW
Collection Date: 4/29/2015 5:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
hylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 12:44:51 PM	R26017
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017
Surr: 4-Bromofluorobenzene	99.6	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505001-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-1-GW
Collection Date: 4/29/2015 5:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	94.8	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017
Surr: Toluene-d8	103	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505001-002
Matrix: TRIP BLANK
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.065	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Toluene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Naphthalene	ND	0.22	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Acetone	ND	0.94	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromobenzene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromoform	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromomethane	ND	1.2	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Butanone	ND	0.36	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
bon disulfide	ND	0.67	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
arbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chloroethane	ND	0.10	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chloroform	ND	0.21	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chloromethane	ND	0.17	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Dibromomethane	ND	0.23	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: Trip Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505001-002
Matrix: TRIP BLANK
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **RAA**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Hexanone	ND	0.48	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Styrene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/7/2015 3:29:51 PM	R26051
Surr: 1,2-Dichloroethane-d4	125	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051
Surr: Dibromofluoromethane	107	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051
Surr: Toluene-d8	93.7	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051

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

Qualifiers:

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

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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762967-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505001-001H SWMU 10-1-GW

Project # :

Collected By :
Collection Date : 04/29/15 17:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.046	0.0050	mg/l	4500CN E-2011	05/11/15	1

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

Reported: 05/12/15 10:42 Printed: 05/12/15 10:43

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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762967-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505001-001I SWMU 10-1-GW

Project # :

Collected By :
Collection Date : 04/29/15 17:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

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

Reported: 05/12/15 10:42 Printed: 05/12/15 10:43
L762967-02 (CR6ICFFP) - pH=7.53

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762967

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762967-01
WG788013: R3036316: L762967-02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19025	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals		
Client ID:	PBW	Batch ID:	19025	RunNo:	25975		
Prep Date:	5/4/2015	Analysis Date:	5/5/2015	SeqNo:	769760	Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Sample ID	LCS-19025	SampType:	LCS	TestCode:	EPA Method 200.7: Metals		
Client ID:	LCSW	Batch ID:	19025	RunNo:	25975		
Prep Date:	5/4/2015	Analysis Date:	5/5/2015	SeqNo:	769761	Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.5	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.3	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.0	85	115			
Iron	0.48	0.020	0.5000	0	95.9	85	115			
Manganese	0.47	0.0020	0.5000	0	93.6	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			

Sample ID	MB-19025	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals		
Client ID:	PBW	Batch ID:	19025	RunNo:	25986		
Prep Date:	5/4/2015	Analysis Date:	5/5/2015	SeqNo:	770113	Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID	LCS-19025	SampType:	LCS	TestCode:	EPA Method 200.7: Metals		
Client ID:	LCSW	Batch ID:	19025	RunNo:	25986		
Prep Date:	5/4/2015	Analysis Date:	5/5/2015	SeqNo:	770114	Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible]	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible]	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19025** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **19025** RunNo: **25987**
Prep Date: **5/4/2015** Analysis Date: **5/5/2015** SeqNo: **770247** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								

Sample ID **MB-19025** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **19025** RunNo: **25987**
Prep Date: **5/4/2015** Analysis Date: **5/5/2015** SeqNo: **770248** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774818** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
I	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774819** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774821** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774822** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774822** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775338** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775342** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
[illegible]ım	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775769** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775770** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
L	ND	0.00050								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26138** RunNo: **26138**
Prep Date: Analysis Date: **5/12/2015** SeqNo: **775346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26138** RunNo: **26138**
Prep Date: Analysis Date: **5/12/2015** SeqNo: **775348** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**							
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**							
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775348**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**							
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**							
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775777**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**							
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**							
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775778**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
S m	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19047**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19047**	RunNo:	**25969**
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769643** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19047**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19047**	RunNo:	**25969**
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769644** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768219** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768220** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.4	90	110			
Sulfate	9.7	0.50	10.00	0	97.4	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768273** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
S	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768274** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Sulfate	9.7	0.50	10.00	0	97.1	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26026**	RunNo: **26026**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771570** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26026**	RunNo: **26026**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771571** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.9	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-18985**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767854** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID **LCS-18985**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768862** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Sample ID **1505001-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-1-GW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768876** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0.02780	87.1	51	131			
BFB	21		20.00		106	80	120			

Sample ID **1505001-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-1-GW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768877** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0.02780	85.5	51	131	1.74	20	
Surr: BFB	21		20.00		105	80	120	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2[illegible]none	ND	10								
C[illegible]n disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
tr[illegible] 1,3-Dichloropropene	ND	1.0								
1,[illegible] richlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **LCSW** Batch ID: **R26017** RunNo: **26017**

Prep Date: Analysis Date: **5/6/2015** SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID **1505001-001a ms** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **SWMU 10-1-GW** Batch ID: **R26017** RunNo: **26017**

Prep Date: Analysis Date: **5/6/2015** SeqNo: **771288** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	26	1.0	20.00	4.693	104	70	130			
Toluene	20	1.0	20.00	0	99.7	70	130			
Chlorobenzene	20	1.0	20.00	0	98.6	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	121	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.9	70	130			
1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.1	70	130			
Surr: Toluene-d8	9.8		10.00		97.5	70	130			

Sample ID **1505001-001a msd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **SWMU 10-1-GW** Batch ID: **R26017** RunNo: **26017**

Prep Date: Analysis Date: **5/6/2015** SeqNo: **771289** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	26	1.0	20.00	4.693	108	70	130	2.94	20	
Toluene	21	1.0	20.00	0	103	70	130	3.36	20	
Chlorobenzene	20	1.0	20.00	0	102	70	130	3.71	20	
1,1-Dichloroethene	25	1.0	20.00	0	127	70	130	4.50	20	
Trichloroethene (TCE)	20	1.0	20.00	0	99.5	70	130	0.436	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		101	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26051**	RunNo: **26051**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772391** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	122	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.5	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26051**	RunNo: **26051**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772398** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26051**	RunNo: **26051**	
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772398**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
H[illegible]hlorobutadiene	ND	1.0								
2-[illegible]anone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26051**	RunNo: **26051**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772398** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		119	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.5	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.2	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-[illegible]nophenyl phenyl ether	ND	10								
B[illegible]enzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N[illegible]sodiphenylamine	ND	10								
N[illegible]alene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-18996** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSW** Batch ID: **18996** RunNo: **25988**

Prep Date: **5/1/2015** Analysis Date: **5/5/2015** SeqNo: **770337** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID **lcsd-18996** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS02** Batch ID: **18996** RunNo: **25988**

Prep Date: **5/1/2015** Analysis Date: **5/5/2015** SeqNo: **770338** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505001**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcsd-18996**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **LCSS02**	Batch ID: **18996**	RunNo: **25988**	
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770338**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505001 RcptNo 1

Received by/date 04/30/15

Logged By Lindsay Mangin 4/30/2015 3:50:00 PM

Completed By: Lindsay Mangin 5/1/2015 6:02:51 AM

Reviewed By: CS 05/01/15

Chain of Custody

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

Log In

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

Special Handling (if applicable)

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

Person Notified: _____ Date _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505001	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) MRO	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	8310 (PNA or PAH)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS-TOTAL & DISSOLVED (SEE ATTACHED SHEET)		GEN CHEM	CR6	Air Bubbles (Y or N)
29.15	1710	WATER	SWMU10-1-GW	40 ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT	-001											✓			✓		
				250 ML AMBER-1	NEAT	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	NAOH	-001							✓									
				50 ML PLASTIC-1	NH_4SO_4	-001															✓	
29.15	—	WATER	TRIP BLANK	40 ML VOA-2	HCL	-002										✓						

Date:	Time:	Relinquished by:	Received by:	Date	Time
30.15	0800	[signature]	[signature]	4-30-15	1300
2015	1550	[signature]	[signature]	04/30/15	1650

Remarks:

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

October 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505002

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 09, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1505002**
Date Reported: **10/5/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505002-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB02
Collection Date: 4/29/2015 7:05:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 6:46:18 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 6:46:18 PM	18985
Surr: DNOP	106	0	76.5-150		%REC	1	5/1/2015 6:46:18 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 8:54:20 PM	R25939
Surr: BFB	86.0	0	80-120		%REC	1	5/4/2015 8:54:20 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/1/2015 12:18:03 PM	R25920
Chloride	0.20	0.13	0.50	J	mg/L	1	5/1/2015 12:18:03 PM	R25920
Sulfate	ND	0.11	0.50		mg/L	1	5/1/2015 12:18:03 PM	R25920
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Beryllium	ND	0.00031	0.0020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Chromium	ND	0.0018	0.0060		mg/L	1	5/6/2015 6:53:49 PM	R26030
Cobalt	ND	0.0013	0.0060		mg/L	1	5/6/2015 6:53:49 PM	R26030
[illegible]	0.030	0.0073	0.020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Manganese	0.00060	0.00027	0.0020	J	mg/L	1	5/6/2015 6:53:49 PM	R26030
Nickel	ND	0.0021	0.010		mg/L	1	5/6/2015 6:53:49 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:53:49 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/6/2015 6:53:49 PM	R26030
Zinc	0.023	0.0028	0.010		mg/L	1	5/6/2015 6:53:49 PM	R26030
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Beryllium	ND	0.00031	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Cadmium	ND	0.00097	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Chromium	ND	0.0022	0.0060		mg/L	1	5/4/2015 2:08:10 PM	R25943
Cobalt	ND	0.0013	0.0060		mg/L	1	5/4/2015 2:08:10 PM	R25943
Iron	ND	0.0073	0.020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Manganese	ND	0.0015	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Nickel	ND	0.0023	0.010		mg/L	1	5/4/2015 2:08:10 PM	R25943
Silver	ND	0.0021	0.0050		mg/L	1	5/4/2015 2:08:10 PM	R25943
Vanadium	ND	0.0015	0.050		mg/L	1	5/4/2015 2:08:10 PM	R25943
Zinc	ND	0.0036	0.010		mg/L	1	5/4/2015 2:08:10 PM	R25943
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00040	0.00014	0.0010	J	mg/L	1	5/12/2015 2:28:40 PM	R26138
Arsenic	ND	0.000065	0.0010		mg/L	1	5/12/2015 2:28:40 PM	R26138

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

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505002-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB02
Collection Date: 4/29/2015 7:05:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	0.000073	0.000026	0.0010	J	mg/L	1	5/12/2015 2:28:40 PM	R26138
Selenium	ND	0.00019	0.0010		mg/L	1	5/12/2015 2:28:40 PM	R26138
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	0.00061	0.00022	0.0010	J	mg/L	1	5/12/2015 2:48:30 PM	R26138
Arsenic	ND	0.00044	0.0010		mg/L	1	5/12/2015 2:48:30 PM	R26138
Lead	ND	0.000069	0.00050		mg/L	1	5/12/2015 2:48:30 PM	R26138
Selenium	ND	0.00019	0.0010		mg/L	1	5/12/2015 2:48:30 PM	R26138
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:22:03 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
z(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
nzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996

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Lab ID: 1505002-001 **Matrix:** AQUEOUS

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Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
3,3´-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
achlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachloroethane	ND	1.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 9:31:26 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505002-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB02
Collection Date: 4/29/2015 7:05:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Surr: 2-Fluorophenol	94.3	0	14.9-111		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: Phenol-d5	86.2	0	11.3-108		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: 2,4,6-Tribromophenol	105	0	15.7-154		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: Nitrobenzene-d5	108	0	47.8-106	S	%REC	1	5/5/2015 9:31:26 PM	18996
Surr: 2-Fluorobiphenyl	105	0	21.3-123		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: 4-Terphenyl-d14	93.3	0	14.3-135		%REC	1	5/5/2015 9:31:26 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Acetone	3.8	0.94	10	J	µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017

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Lab ID: 1505002-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB02
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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
hylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 2:35:04 PM	R26017
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017
Surr: 4-Bromofluorobenzene	98.6	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505002-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB02
Collection Date: 4/29/2015 7:05:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017
Surr: Toluene-d8	98.7	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017

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

Qualifiers:

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

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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762969-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505002-001H SWMU 10 EB02

Project # :

Collected By :
Collection Date : 04/29/15 19:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/11/15	1

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

Reported: 05/12/15 08:17 Printed: 05/12/15 08:18

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

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

Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762969

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762969-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768974** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible]	0.48	0.0020	0.5000	0	95.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.1	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.2	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.4	85	115			
Iron	0.47	0.020	0.5000	0	94.4	85	115			
Manganese	0.47	0.0020	0.5000	0	93.7	85	115			
Nickel	0.47	0.010	0.5000	0	93.6	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.4	85	115			
Zinc	0.47	0.010	0.5000	0	93.5	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	0.00038	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R25943**	RunNo: **25943**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.50	0.0020	0.5000	0	99.0	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Iron	0.48	0.020	0.5000	0	95.1	85	115			
Manganese	0.47	0.0020	0.5000	0	93.5	85	115			
Nickel	0.47	0.010	0.5000	0	93.8	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.6	85	115			
Zinc	0.48	0.010	0.5000	0	96.7	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
[illegible]	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26138** RunNo: **26138**
Prep Date: Analysis Date: **5/12/2015** SeqNo: **775338** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26138** RunNo: **26138**
Prep Date: Analysis Date: **5/12/2015** SeqNo: **775342** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26138** RunNo: **26138**
Date: Analysis Date: **5/12/2015** SeqNo: **775769** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26138** RunNo: **26138**
Prep Date: Analysis Date: **5/12/2015** SeqNo: **775770** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals
Client ID:	LCSW	Batch ID:	R26138	RunNo:	26138
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775346 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals
Client ID:	PBW	Batch ID:	R26138	RunNo:	26138
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775348 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals
Client ID:	LCSW	Batch ID:	R26138	RunNo:	26138
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775777 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals
Client ID:	PBW	Batch ID:	R26138	RunNo:	26138
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775778 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19047**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19047**	RunNo:	**25969**
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769643** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19047**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19047**	RunNo:	**25969**
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769644** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768219** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768220** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.4	90	110			
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Sulfate	9.7	0.50	10.00	0	97.4	90	110			

Sample ID **1505002-001EMS**	SampType: **MS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **SWMU 10 EB02**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768236** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.3	66.1	113			
Chloride	4.8	0.50	5.000	0.2004	92.7	81.8	112			
Sulfate	9.4	0.50	10.00	0	94.5	88.3	114			

Sample ID **1505002-001EMSD**	SampType: **MSD**	TestCode: **EPA Method 300.0: Anions**
Client ID: **SWMU 10 EB02**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768237** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	100	66.1	113	0.902	20	
Chloride	4.9	0.50	5.000	0.2004	93.5	81.8	112	0.817	20	
Sulfate	9.5	0.50	10.00	0	95.1	88.3	114	0.637	20	

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R25920**	RunNo: **25920**
Prep Date:	Analysis Date: **5/1/2015**	SeqNo: **768273** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS**		SampType: **LCS**			TestCode: **EPA Method 300.0: Anions**					
Client ID: **LCSW**		Batch ID: **R25920**			RunNo: **25920**					
Prep Date:		Analysis Date: **5/1/2015**			SeqNo: **768274**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.9	0.50	5.000	0	97.0	90	110			
Sulfate	9.7	0.50	10.00	0	97.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-18985**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**			
Client ID: **PBW**	Batch ID: **18985**	RunNo: **25902**			
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767854**	Units: **mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID **LCS-18985**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**			
Client ID: **LCSW**	Batch ID: **18985**	RunNo: **25902**			
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767970**	Units: **mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768862** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**	
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
tr[illegible],3-Dichloropropene	ND	1.0								
1,[illegible]richlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**mb-18996**	SampType:	**MBLK**		TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**PBW**	Batch ID:	**18996**		RunNo:	**25988**					
Prep Date:	**5/1/2015**	Analysis Date:	**5/5/2015**		SeqNo:	**770336**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**	
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N[illegible]nsodiphenylamine	ND	10								
N[illegible]halene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-18996** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSW** Batch ID: **18996** RunNo: **25988**

Prep Date: **5/1/2015** Analysis Date: **5/5/2015** SeqNo: **770337** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID **lcsd-18996** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS02** Batch ID: **18996** RunNo: **25988**

Prep Date: **5/1/2015** Analysis Date: **5/5/2015** SeqNo: **770338** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505002**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcsd-18996**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **LCSS02**	Batch ID: **18996**	RunNo: **25988**	
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770338**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505002** RcptNo 1

Received by/date: 04/30/15

Logged By: **Lindsay Mangin** 4/30/2015 3:50:00 PM

Completed By: **Lindsay Mangin** 5/1/2015 6:28:50 AM

Reviewed By: CS 05/01/15

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
    # of preserved bottles checked for pH: 21 (<2 or >12 unless noted)
    Adjusted? NO
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐ Checked by
    (If no, notify customer for authorization.)

Special Handling (if applicable)

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

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505002	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS - TOTAL & DISSOLVED	(SEE ATTACHED SHEET)	GEN CHEM (SEE ATTACHED SHEET)	CR6	Air Bubbles (Y or N)
4-29-15	1905	WATER	SWMU 10 EB02	40 ML VOA-6	HCL	-001			✓							✓						
↓	↓	↓	↓	1 LITER AMBER-2	NEAT	-001											✓			✓		
				250 ML AMBER-1	NEAT	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	NaOH	-001							✓									
				~~50 ML PLASTIC-1~~	~~NH_4OH~~																	

Date:	Time:	Relinquished by:	Received by:	Date	Time
4-30-15	0800			4-30-15	1300
Date:	Time:	Relinquished by:	Received by:	Date	Time
4-30-15	1550			04/30/15	1550

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

October 08, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505003

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 09, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Case Narrative

WO#: **1505003**
Date: **10/8/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (0-2')
Collection Date: 4/29/2015 12:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	7700	540	980		mg/Kg-dr	100	5/5/2015 2:49:11 PM	19040
Motor Oil Range Organics (MRO)	5900	4900	4900		mg/Kg-dr	100	5/5/2015 2:49:11 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	100	5/5/2015 2:49:11 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.53	0.0071	0.080		mg/Kg-dr	2	5/6/2015 4:02:26 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Arsenic	2.6	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Barium	500	0.069	0.23		mg/Kg-dr	2	5/7/2015 1:22:33 PM	19080
Beryllium	0.99	0.0086	0.17		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Chromium	54	0.070	0.35		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Cobalt	6.7	0.044	0.35		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Iron	18000	70	290		mg/Kg-dr	100	5/7/2015 11:03:43 AM	19080
d	4.9	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Manganese	870	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:30:37 PM	19080
Nickel	14	0.15	0.58		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Vanadium	26	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Zinc	150	0.75	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.5	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Acenaphthylene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Aniline	ND	1.0	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Anthracene	ND	1.0	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Azobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benz(a)anthracene	ND	0.95	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(a)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(b)fluoranthene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(g,h,i)perylene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(k)fluoranthene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzoic acid	ND	0.69	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzyl alcohol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Bis(2-chloroethoxy)methane	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (0-2')
Collection Date: 4/29/2015 12:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.92	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Bis(2-ethylhexyl)phthalate	ND	1.4	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Bromophenyl phenyl ether	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Butyl benzyl phthalate	ND	1.5	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Carbazole	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Chloro-3-methylphenol	ND	1.2	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Chloroaniline	ND	1.1	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Chloronaphthalene	ND	1.3	3.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Chlorophenol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Chlorophenyl phenyl ether	ND	1.8	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Chrysene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Di-n-butyl phthalate	ND	1.4	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Di-n-octyl phthalate	ND	1.3	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Dibenz(a,h)anthracene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Dibenzofuran	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,2-Dichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,3-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,4-Dichlorobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
3,3'-Dichlorobenzidine	ND	0.93	3.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Diethyl phthalate	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Dimethyl phthalate	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dichlorophenol	ND	1.2	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dimethylphenol	ND	0.95	3.6		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.65	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dinitrophenol	ND	0.50	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dinitrotoluene	ND	1.1	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,6-Dinitrotoluene	ND	1.3	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Fluoranthene	ND	1.5	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Fluorene	ND	1.6	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachlorobutadiene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachlorocyclopentadiene	ND	0.83	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachloroethane	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Indeno(1,2,3-cd)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Isophorone	ND	1.3	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1-Methylnaphthalene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Methylnaphthalene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Methylphenol	ND	1.2	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (0-2')
Collection Date: 4/29/2015 12:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
N-Nitrosodi-n-propylamine	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
N-Nitrosodiphenylamine	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Naphthalene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Nitroaniline	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
3-Nitroaniline	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Nitroaniline	ND	1.1	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Nitrobenzene	ND	1.2	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Nitrophenol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Nitrophenol	ND	1.0	3.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Pentachlorophenol	ND	0.75	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Phenanthrene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Phenol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Pyrene	ND	1.6	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Pyridine	ND	1.0	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,2,4-Trichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4,5-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4,6-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/8/2015 6:26:16 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.014	0.0046	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Toluene	0.010	0.0037	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Ethylbenzene	0.016	0.0028	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.0044	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,4-Trimethylbenzene	0.063	0.0016	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,3,5-Trimethylbenzene	0.041	0.0020	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dichloroethane (EDC)	ND	0.012	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dibromoethane (EDB)	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Naphthalene	0.12	0.0074	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1-Methylnaphthalene	0.51	0.019	0.12		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Methylnaphthalene	0.53	0.020	0.12		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Acetone	ND	0.023	0.47		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Bromobenzene	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Bromodichloromethane	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (0-2')
Collection Date: 4/29/2015 12:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Bromomethane	ND	0.0060	0.093		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Butanone	ND	0.020	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Carbon disulfide	ND	0.022	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Carbon tetrachloride	ND	0.0030	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chlorobenzene	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chloroethane	ND	0.024	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chloroform	ND	0.0032	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chloromethane	ND	0.0036	0.093		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Chlorotoluene	ND	0.0035	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
4-Chlorotoluene	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
cis-1,2-DCE	ND	0.0039	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
cis-1,3-Dichloropropene	ND	0.0022	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.0053	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Dibromochloromethane	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Dibromomethane	ND	0.0033	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dichlorobenzene	ND	0.0019	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,3-Dichlorobenzene	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,4-Dichlorobenzene	ND	0.0039	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Dichlorodifluoromethane	ND	0.0078	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1-Dichloroethane	ND	0.012	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1-Dichloroethene	ND	0.0021	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dichloropropane	ND	0.0017	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,3-Dichloropropane	ND	0.0043	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2,2-Dichloropropane	ND	0.0045	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1-Dichloropropene	ND	0.0046	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Hexachlorobutadiene	ND	0.0043	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Hexanone	ND	0.0076	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Isopropylbenzene	ND	0.0026	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
4-Isopropyltoluene	0.0061	0.0022	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
4-Methyl-2-pentanone	ND	0.0054	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Methylene chloride	ND	0.012	0.093		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
n-Butylbenzene	0.0094	0.0027	0.093	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
n-Propylbenzene	0.0051	0.0023	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
sec-Butylbenzene	ND	0.0044	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Styrene	ND	0.0057	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
tert-Butylbenzene	ND	0.0036	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.0038	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (0-2')
Collection Date: 4/29/2015 12:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0027	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
trans-1,2-DCE	ND	0.0020	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
trans-1,3-Dichloropropene	ND	0.0056	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,3-Trichlorobenzene	ND	0.0066	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,4-Trichlorobenzene	ND	0.0057	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,1-Trichloroethane	ND	0.0047	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,2-Trichloroethane	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Trichloroethene (TCE)	ND	0.0030	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Trichlorofluoromethane	ND	0.0094	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,3-Trichloropropane	ND	0.0052	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Vinyl chloride	ND	0.012	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Xylenes, Total	0.14	0.0086	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Surr: Dibromofluoromethane	99.5		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
Surr: 1,2-Dichloroethane-d4	93.8		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
Surr: Toluene-d8	95.1		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
Surr: 4-Bromofluorobenzene	81.4		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	2.5	0.78	3.1	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	R25941
Surr: BFB	112	0	67.4-150		%REC	1	5/5/2015 12:59:46 AM	R25941

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (2-4'
Collection Date: 4/29/2015 12:12:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	780	5.3	9.6		mg/Kg-dr	1	5/5/2015 3:16:02 PM	19040
Motor Oil Range Organics (MRO)	300	48	48		mg/Kg-dr	1	5/5/2015 3:16:02 PM	19040
Surr: DNOP	110	0	57.9-140		%REC	1	5/5/2015 3:16:02 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	31	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0087	0.0044	0.050	J	mg/Kg-dr	1	5/6/2015 3:33:31 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.9	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Arsenic	1.9	0.41	3.5	J	mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Barium	190	0.042	0.14		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Beryllium	1.4	0.010	0.21		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Cadmium	ND	0.039	0.14		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Chromium	5.0	0.085	0.42		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Cobalt	2.9	0.053	0.42		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Iron	12000	85	350		mg/Kg-dr	100	5/7/2015 11:05:07 AM	19080
'd	9.2	0.15	0.35		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
...anganese	410	0.17	0.28		mg/Kg-dr	2	5/7/2015 1:25:33 PM	19080
Nickel	4.4	0.18	0.70		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Selenium	ND	2.2	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Silver	ND	0.042	0.35		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Vanadium	11	0.047	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Zinc	22	0.91	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.90	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Acenaphthylene	ND	0.75	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Aniline	ND	0.65	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Anthracene	ND	0.63	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Azobenzene	ND	0.83	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benz(a)anthracene	ND	0.58	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(a)pyrene	ND	0.83	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(b)fluoranthene	ND	0.70	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(g,h,i)perylene	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(k)fluoranthene	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzoic acid	ND	0.42	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzyl alcohol	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Bis(2-chloroethoxy)methane	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (2-4'
Collection Date: 4/29/2015 12:12:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.73	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.57	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.83	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Bromophenyl phenyl ether	ND	0.79	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Butyl benzyl phthalate	ND	0.90	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Carbazole	ND	0.69	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Chloro-3-methylphenol	ND	0.74	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Chloroaniline	ND	0.69	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Chloronaphthalene	ND	0.79	1.9		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Chlorophenol	ND	0.69	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Chlorophenyl phenyl ether	ND	1.1	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Chrysene	ND	0.74	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Di-n-butyl phthalate	ND	0.84	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Di-n-octyl phthalate	ND	0.83	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Dibenz(a,h)anthracene	ND	0.80	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Dibenzofuran	ND	0.79	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,2-Dichlorobenzene	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,3-Dichlorobenzene	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Dichlorobenzene	ND	0.78	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
3,3'-Dichlorobenzidine	ND	0.57	1.9		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Diethyl phthalate	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Dimethyl phthalate	ND	0.68	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dichlorophenol	ND	0.74	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dimethylphenol	ND	0.58	2.2		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.40	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dinitrophenol	ND	0.31	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dinitrotoluene	ND	0.66	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,6-Dinitrotoluene	ND	0.82	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Fluoranthene	ND	0.90	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Fluorene	ND	1.0	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachlorobenzene	ND	0.70	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachlorobutadiene	ND	0.73	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachlorocyclopentadiene	ND	0.51	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachloroethane	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Isophorone	ND	0.79	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1-Methylnaphthalene	ND	0.69	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Methylnaphthalene	ND	0.68	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Methylphenol	ND	0.74	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (2-4'
Collection Date: 4/29/2015 12:12:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.77	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
N-Nitrosodi-n-propylamine	ND	0.77	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
N-Nitrosodiphenylamine	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Naphthalene	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Nitroaniline	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
3-Nitroaniline	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Nitroaniline	ND	0.67	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Nitrobenzene	ND	0.76	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Nitrophenol	ND	0.67	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Nitrophenol	ND	0.64	1.9		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Pentachlorophenol	ND	0.46	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Phenanthrene	1.1	0.78	1.5	J	mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Phenol	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Pyrene	ND	0.96	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Pyridine	ND	0.62	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,2,4-Trichlorobenzene	ND	0.76	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4,5-Trichlorophenol	ND	0.86	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4,6-Trichlorophenol	ND	0.86	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Surr: 2-Fluorophenol	92.9		26.4-129		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: Phenol-d5	92.6		34.8-118		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: 2,4,6-Tribromophenol	90.9		26.8-128		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: Nitrobenzene-d5	83.7		35.8-124		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: 2-Fluorobiphenyl	80.1		24.5-139		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: 4-Terphenyl-d14	103		29.4-129		%REC	1	5/8/2015 6:54:09 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.040	0.0060	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Toluene	0.024	0.0048	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Ethylbenzene	0.030	0.0037	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.0057	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,4-Trimethylbenzene	0.11	0.0020	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,3,5-Trimethylbenzene	0.054	0.0026	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dichloroethane (EDC)	ND	0.016	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dibromoethane (EDB)	ND	0.0032	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Naphthalene	0.16	0.0096	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1-Methylnaphthalene	0.63	0.024	0.16		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Methylnaphthalene	0.74	0.026	0.16		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Acetone	ND	0.030	0.60		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Bromobenzene	ND	0.0030	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Bromodichloromethane	ND	0.0033	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (2-4'
Collection Date: 4/29/2015 12:12:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0032	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Bromomethane	ND	0.0078	0.12		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Butanone	ND	0.026	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Carbon disulfide	ND	0.029	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Carbon tetrachloride	ND	0.0039	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chlorobenzene	ND	0.0031	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chloroethane	ND	0.031	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chloroform	ND	0.0042	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chloromethane	ND	0.0047	0.12		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Chlorotoluene	ND	0.0045	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
4-Chlorotoluene	ND	0.0030	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
cis-1,2-DCE	ND	0.0051	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
cis-1,3-Dichloropropene	ND	0.0028	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.0069	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Dibromochloromethane	ND	0.0030	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Dibromomethane	ND	0.0042	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dichlorobenzene	ND	0.0024	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,3-Dichlorobenzene	ND	0.0047	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Dichlorobenzene	ND	0.0050	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Dichlorodifluoromethane	ND	0.010	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1-Dichloroethane	ND	0.016	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1-Dichloroethene	ND	0.0028	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dichloropropane	ND	0.0022	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,3-Dichloropropane	ND	0.0055	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2,2-Dichloropropane	ND	0.0059	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1-Dichloropropene	ND	0.0060	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Hexachlorobutadiene	ND	0.0056	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Hexanone	ND	0.0099	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Isopropylbenzene	0.0046	0.0034	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
4-Isopropyltoluene	0.0092	0.0029	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
4-Methyl-2-pentanone	ND	0.0070	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Methylene chloride	ND	0.016	0.12		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
n-Butylbenzene	0.016	0.0035	0.12	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
n-Propylbenzene	0.010	0.0030	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
sec-Butylbenzene	ND	0.0057	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Styrene	ND	0.0074	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
tert-Butylbenzene	ND	0.0046	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.0033	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.0049	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (2-4'
Collection Date: 4/29/2015 12:12:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0035	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
trans-1,2-DCE	ND	0.0026	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
trans-1,3-Dichloropropene	ND	0.0072	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,3-Trichlorobenzene	ND	0.0086	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,4-Trichlorobenzene	ND	0.0074	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,1-Trichloroethane	ND	0.0061	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,2-Trichloroethane	ND	0.0048	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Trichloroethene (TCE)	ND	0.0039	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Trichlorofluoromethane	ND	0.012	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,3-Trichloropropane	ND	0.0067	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Vinyl chloride	ND	0.016	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Xylenes, Total	0.15	0.011	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Surr: Dibromofluoromethane	101		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
Surr: 1,2-Dichloroethane-d4	94.3		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
Surr: Toluene-d8	93.9		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
Surr: 4-Bromofluorobenzene	75.7		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	4.7	1.0	4.0		mg/Kg-dr	1	5/5/2015 2:26:08 AM	R25941
Surr: BFB	106	0	67.4-150		%REC	1	5/5/2015 2:26:08 AM	R25941

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (4-6')
Collection Date: 4/29/2015 12:32:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	3000	54	97		mg/Kg-dr	10	5/7/2015 3:18:58 PM	19040
Motor Oil Range Organics (MRO)	ND	480	480		mg/Kg-dr	10	5/7/2015 3:18:58 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/7/2015 3:18:58 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	50	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0085	0.0063	0.071	J	mg/Kg-dr	1	5/6/2015 3:35:24 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	2.6	4.9		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Arsenic	1.5	0.57	4.9	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Barium	110	0.058	0.20		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Beryllium	1.8	0.014	0.29		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Cadmium	0.062	0.054	0.20	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Chromium	ND	0.12	0.59		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Cobalt	1.0	0.074	0.59		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Iron	7200	120	490		mg/Kg-dr	100	5/7/2015 11:06:30 AM	19080
[illegible]d	17	0.21	0.49		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
[illegible]anganese	200	0.11	0.20		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Nickel	0.69	0.25	0.98	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Selenium	ND	3.0	4.9		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Silver	ND	0.058	0.49		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Vanadium	2.3	0.065	4.9	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Zinc	24	1.3	4.9		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.24	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Acenaphthylene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Aniline	ND	0.17	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Anthracene	ND	0.17	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Azobenzene	ND	0.22	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benz(a)anthracene	ND	0.16	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(a)pyrene	ND	0.22	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(b)fluoranthene	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(g,h,i)perylene	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(k)fluoranthene	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzoic acid	ND	0.11	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzyl alcohol	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Bis(2-chloroethoxy)methane	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (4-6')
Collection Date: 4/29/2015 12:32:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.15	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.22	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Bromophenyl phenyl ether	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Butyl benzyl phthalate	ND	0.24	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Carbazole	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Chloro-3-methylphenol	ND	0.20	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Chloroaniline	ND	0.18	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Chloronaphthalene	ND	0.21	0.50		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Chlorophenol	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Chlorophenyl phenyl ether	ND	0.30	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Chrysene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Di-n-butyl phthalate	ND	0.23	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Di-n-octyl phthalate	ND	0.22	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Dibenz(a,h)anthracene	ND	0.22	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Dibenzofuran	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,2-Dichlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,3-Dichlorobenzene	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,4-Dichlorobenzene	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
3,3'-Dichlorobenzidine	ND	0.15	0.50		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Diethyl phthalate	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Dimethyl phthalate	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dichlorophenol	ND	0.20	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dimethylphenol	ND	0.16	0.60		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.11	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dinitrophenol	ND	0.083	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dinitrotoluene	ND	0.18	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,6-Dinitrotoluene	ND	0.22	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Fluoranthene	ND	0.24	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Fluorene	1.4	0.27	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachlorobutadiene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachlorocyclopentadiene	ND	0.14	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachloroethane	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Isophorone	ND	0.21	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1-Methylnaphthalene	16	0.93	2.0		mg/Kg-dr	5	5/11/2015 12:27:02 PM	19026
2-Methylnaphthalene	26	0.91	2.0		mg/Kg-dr	5	5/11/2015 12:27:02 PM	19026
2-Methylphenol	ND	0.20	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (4-6')
Collection Date: 4/29/2015 12:32:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
N-Nitrosodi-n-propylamine	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
N-Nitrosodiphenylamine	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Naphthalene	5.8	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Nitroaniline	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
3-Nitroaniline	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Nitroaniline	ND	0.18	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Nitrobenzene	ND	0.21	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Nitrophenol	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Nitrophenol	ND	0.17	0.50		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Pentachlorophenol	ND	0.12	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Phenanthrene	3.0	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Phenol	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Pyrene	ND	0.26	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Pyridine	ND	0.17	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,2,4-Trichlorobenzene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4,5-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4,6-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Surr: 2-Fluorophenol	69.4		26.4-129		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: Phenol-d5	71.1		34.8-118		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: 2,4,6-Tribromophenol	46.1		26.8-128		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: Nitrobenzene-d5	40.1		35.8-124		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: 2-Fluorobiphenyl	55.7		24.5-139		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: 4-Terphenyl-d14	88.8		29.4-129		%REC	1	5/8/2015 7:22:09 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	8.0	0.12	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Toluene	7.1	0.094	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Ethylbenzene	14	0.073	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.11	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,4-Trimethylbenzene	25	0.040	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,3,5-Trimethylbenzene	8.4	0.052	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dichloroethane (EDC)	ND	0.32	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dibromoethane (EDB)	ND	0.063	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Naphthalene	26	0.19	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1-Methylnaphthalene	46	0.48	3.2		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Methylnaphthalene	80	2.6	16		mg/Kg-dr	50	5/5/2015 12:28:54 PM	R25982
Acetone	ND	0.59	12		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Bromobenzene	ND	0.059	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Bromodichloromethane	ND	0.065	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (4-6')
Collection Date: 4/29/2015 12:32:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.064	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Bromomethane	ND	0.15	2.4		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Butanone	ND	0.51	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Carbon disulfide	ND	0.57	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Carbon tetrachloride	ND	0.077	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chlorobenzene	ND	0.061	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chloroethane	ND	0.61	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chloroform	ND	0.083	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chloromethane	ND	0.092	2.4		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Chlorotoluene	ND	0.090	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
4-Chlorotoluene	ND	0.060	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
cis-1,2-DCE	ND	0.10	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
cis-1,3-Dichloropropene	ND	0.055	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.14	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Dibromochloromethane	ND	0.060	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Dibromomethane	ND	0.084	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dichlorobenzene	ND	0.048	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,3-Dichlorobenzene	ND	0.093	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,4-Dichlorobenzene	ND	0.099	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Dichlorodifluoromethane	ND	0.20	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1-Dichloroethane	ND	0.32	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1-Dichloroethene	ND	0.055	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dichloropropane	ND	0.044	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,3-Dichloropropane	ND	0.11	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2,2-Dichloropropane	ND	0.12	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1-Dichloropropene	ND	0.12	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Hexachlorobutadiene	ND	0.11	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Hexanone	ND	0.20	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Isopropylbenzene	2.6	0.067	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
4-Isopropyltoluene	1.2	0.056	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
4-Methyl-2-pentanone	ND	0.14	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Methylene chloride	ND	0.32	2.4		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
n-Butylbenzene	1.9	0.068	2.4	J	mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
n-Propylbenzene	3.8	0.059	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
sec-Butylbenzene	1.2	0.11	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Styrene	ND	0.15	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
tert-Butylbenzene	ND	0.091	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.065	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.096	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (4-6')
Collection Date: 4/29/2015 12:32:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.069	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
trans-1,2-DCE	ND	0.052	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
trans-1,3-Dichloropropene	ND	0.14	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,3-Trichlorobenzene	ND	0.17	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,4-Trichlorobenzene	ND	0.15	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,1-Trichloroethane	ND	0.12	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,2-Trichloroethane	ND	0.095	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Trichloroethene (TCE)	ND	0.077	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Trichlorofluoromethane	ND	0.24	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,3-Trichloropropane	ND	0.13	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Vinyl chloride	ND	0.32	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Xylenes, Total	54	0.22	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Surr: Dibromofluoromethane	101		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
Surr: 1,2-Dichloroethane-d4	98.6		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
Surr: Toluene-d8	98.9		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
Surr: 4-Bromofluorobenzene	74.6		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	740	20	79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	R25941
Surr: BFB	99.6	0	67.4-150		%REC	10	5/5/2015 2:55:01 AM	R25941

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

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (14-16'
Collection Date: 4/29/2015 12:50:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/5/2015 4:36:28 PM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/5/2015 4:36:28 PM	19040
Surr: DNOP	105	0	57.9-140		%REC	1	5/5/2015 4:36:28 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	49	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.011	0.0060	0.068	J	mg/Kg-dr	1	5/6/2015 3:37:14 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	2.5	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Arsenic	1.5	0.56	4.7	J	mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Barium	120	0.056	0.19		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Beryllium	1.8	0.014	0.28		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Cadmium	ND	0.053	0.19		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Chromium	2.5	0.11	0.57		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Cobalt	2.3	0.071	0.57		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Iron	10000	110	470		mg/Kg-dr	100	5/7/2015 11:08:10 AM	19080
d	16	0.21	0.47		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
...anganese	280	0.11	0.19		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Nickel	3.1	0.24	0.94		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Selenium	ND	2.9	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Silver	ND	0.056	0.47		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Vanadium	7.2	0.063	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Zinc	27	1.2	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.24	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Acenaphthylene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Aniline	ND	0.17	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Anthracene	ND	0.17	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Azobenzene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benz(a)anthracene	ND	0.16	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(a)pyrene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(b)fluoranthene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(g,h,i)perylene	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(k)fluoranthene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzoic acid	ND	0.11	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzyl alcohol	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Bis(2-chloroethoxy)methane	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (14-16'
Collection Date: 4/29/2015 12:50:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.15	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.22	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Bromophenyl phenyl ether	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Butyl benzyl phthalate	ND	0.24	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Carbazole	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Chloro-3-methylphenol	ND	0.20	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Chloroaniline	ND	0.18	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Chloronaphthalene	ND	0.21	0.50		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Chlorophenol	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Chlorophenyl phenyl ether	ND	0.30	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Chrysene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Di-n-butyl phthalate	ND	0.22	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Di-n-octyl phthalate	ND	0.22	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Dibenz(a,h)anthracene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Dibenzofuran	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,2-Dichlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,3-Dichlorobenzene	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,4-Dichlorobenzene	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
3,3'-Dichlorobenzidine	ND	0.15	0.50		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Diethyl phthalate	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Dimethyl phthalate	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dichlorophenol	ND	0.20	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dimethylphenol	ND	0.16	0.60		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.11	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dinitrophenol	ND	0.082	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dinitrotoluene	ND	0.18	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,6-Dinitrotoluene	ND	0.22	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Fluoranthene	ND	0.24	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Fluorene	ND	0.27	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachlorobutadiene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachlorocyclopentadiene	ND	0.14	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachloroethane	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Isophorone	ND	0.21	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1-Methylnaphthalene	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Methylnaphthalene	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Methylphenol	ND	0.20	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (14-16'
Collection Date: 4/29/2015 12:50:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
N-Nitrosodi-n-propylamine	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
N-Nitrosodiphenylamine	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Naphthalene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Nitroaniline	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
3-Nitroaniline	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Nitroaniline	ND	0.18	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Nitrobenzene	ND	0.20	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Nitrophenol	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Nitrophenol	ND	0.17	0.50		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Pentachlorophenol	ND	0.12	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Phenanthrene	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Phenol	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Pyrene	ND	0.26	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Pyridine	ND	0.17	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,2,4-Trichlorobenzene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4,5-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4,6-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Surr: 2-Fluorophenol	63.1		26.4-129		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: Phenol-d5	64.2		34.8-118		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: 2,4,6-Tribromophenol	63.8		26.8-128		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: Nitrobenzene-d5	54.7		35.8-124		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: 2-Fluorobiphenyl	41.2		24.5-139		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: 4-Terphenyl-d14	73.1		29.4-129		%REC	1	5/7/2015 7:45:24 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.049	0.010	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Toluene	0.013	0.0084	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Ethylbenzene	0.026	0.0065	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.010	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,4-Trimethylbenzene	0.17	0.0035	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,3,5-Trimethylbenzene	0.056	0.0046	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.028	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.0056	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Naphthalene	0.11	0.017	0.14	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1-Methylnaphthalene	0.38	0.042	0.28		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Methylnaphthalene	0.69	0.046	0.28		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Acetone	ND	0.053	1.1		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Bromobenzene	ND	0.0052	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Bromodichloromethane	ND	0.0058	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (14-16'
Collection Date: 4/29/2015 12:50:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0057	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Bromomethane	ND	0.014	0.21		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Butanone	ND	0.045	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Carbon disulfide	ND	0.051	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Carbon tetrachloride	ND	0.0069	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chlorobenzene	ND	0.0054	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chloroethane	ND	0.055	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chloroform	ND	0.0074	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chloromethane	ND	0.0082	0.21		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Chlorotoluene	ND	0.0080	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
4-Chlorotoluene	ND	0.0053	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
cis-1,2-DCE	ND	0.0089	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
cis-1,3-Dichloropropene	ND	0.0049	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.012	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Dibromochloromethane	ND	0.0053	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Dibromomethane	ND	0.0074	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dichlorobenzene	ND	0.0043	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,3-Dichlorobenzene	ND	0.0083	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Dichlorobenzene	ND	0.0088	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Dichlorodifluoromethane	ND	0.018	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1-Dichloroethane	ND	0.028	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1-Dichloroethene	ND	0.0049	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dichloropropane	ND	0.0039	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,3-Dichloropropane	ND	0.0097	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2,2-Dichloropropane	ND	0.010	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1-Dichloropropene	ND	0.011	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Hexachlorobutadiene	ND	0.0098	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Hexanone	ND	0.017	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Isopropylbenzene	0.013	0.0060	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
4-Isopropyltoluene	0.020	0.0050	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
4-Methyl-2-pentanone	ND	0.012	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Methylene chloride	ND	0.028	0.21		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
n-Butylbenzene	0.038	0.0061	0.21	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
n-Propylbenzene	0.026	0.0053	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
sec-Butylbenzene	ND	0.010	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Styrene	ND	0.013	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
tert-Butylbenzene	ND	0.0081	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.0058	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.0086	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (14-16'
Collection Date: 4/29/2015 12:50:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0061	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
trans-1,2-DCE	ND	0.0046	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
trans-1,3-Dichloropropene	ND	0.013	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,3-Trichlorobenzene	ND	0.015	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,4-Trichlorobenzene	ND	0.013	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,1-Trichloroethane	ND	0.011	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,2-Trichloroethane	ND	0.0085	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Trichloroethene (TCE)	ND	0.0069	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Trichlorofluoromethane	ND	0.021	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,3-Trichloropropane	ND	0.012	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Vinyl chloride	ND	0.028	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Xylenes, Total	0.11	0.020	0.14	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Surr: Dibromofluoromethane	100		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
Surr: 1,2-Dichloroethane-d4	89.7		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
Surr: Toluene-d8	94.0		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
Surr: 4-Bromofluorobenzene	92.4		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	13	1.8	7.1		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Surr: BFB	111	0	67.4-150		%REC	1	5/5/2015 12:57:41 PM	R25982

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (22-24')
Collection Date: 4/29/2015 1:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/5/2015 5:03:15 PM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/5/2015 5:03:15 PM	19040
Surr: DNOP	110	0	57.9-140		%REC	1	5/5/2015 5:03:15 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0039	0.0034	0.039	J	mg/Kg-dr	1	5/6/2015 3:39:05 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Arsenic	1.6	0.33	2.8	J	mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Barium	200	0.034	0.11		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Beryllium	0.99	0.0084	0.17		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Chromium	15	0.068	0.34		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Cobalt	7.4	0.043	0.34		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Iron	18000	68	280		mg/Kg-dr	100	5/7/2015 11:09:34 AM	19080
[illegible]d	ND	0.12	0.28		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Manganese	820	0.33	0.57		mg/Kg-dr	5	5/8/2015 2:32:19 PM	19080
Nickel	15	0.15	0.57		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Vanadium	18	0.038	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Zinc	23	0.73	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Acenaphthylene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Aniline	ND	0.098	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Anthracene	ND	0.096	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benz(a)anthracene	ND	0.088	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (22-24')
Collection Date: 4/29/2015 1:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.086	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Carbazole	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Chlorophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Chrysene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Di-n-octyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
3,3'-Dichlorobenzidine	ND	0.087	0.28		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Dimethyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dinitrophenol	ND	0.047	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Fluorene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachlorocyclopentadiene	ND	0.078	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (22-24')
Collection Date: 4/29/2015 1:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Nitrophenol	ND	0.097	0.28		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Surr: 2-Fluorophenol	64.5		26.4-129		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: Phenol-d5	62.2		34.8-118		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: 2,4,6-Tribromophenol	75.4		26.8-128		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: Nitrobenzene-d5	56.1		35.8-124		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: 2-Fluorobiphenyl	60.1		24.5-139		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: 4-Terphenyl-d14	95.5		29.4-129		%REC	1	5/7/2015 8:13:38 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0179	0.000432	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Toluene	0.0112	0.000199	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Ethylbenzene	0.00258	0.000322	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Xylenes, Total	0.00849	0.00114	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000803	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,4-Trimethylbenzene	0.00263	0.000501	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,3,5-Trimethylbenzene	0.00179	0.000336	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000513	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000229	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Naphthalene	0.000785	0.000626	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1-Methylnaphthalene	0.000843	0.000752	0.00383	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Methylnaphthalene	0.000852	0.000749	0.00383	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Acetone	0.00186	0.00120	0.00958	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Bromobenzene	ND	0.000533	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (22-24')
Collection Date: 4/29/2015 1:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000259	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Bromoform	ND	0.000496	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Bromomethane	ND	0.00113	0.00287		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Butanone	ND	0.000613	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Carbon tetrachloride	ND	0.000347	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chlorobenzene	ND	0.000194	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chloroform	ND	0.000395	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chloromethane	ND	0.000226	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Chlorotoluene	ND	0.000374	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Carbon disulfide	ND	0.000867	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
4-Chlorotoluene	ND	0.000369	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
cis-1,2-DCE	ND	0.000507	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
cis-1,3-Dichloropropene	ND	0.00192	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000563	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Dibromochloromethane	ND	0.000215	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Dibromomethane	ND	0.00109	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1 2-Dichlorobenzene	ND	0.000425	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
-Dichlorobenzene	ND	0.000325	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,4-Dichlorobenzene	ND	0.000301	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Dichlorodifluoromethane	ND	0.000782	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1-Dichloroethane	ND	0.000447	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1-Dichloroethene	ND	0.000320	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dichloropropane	ND	0.000409	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,3-Dichloropropane	ND	0.000298	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2,2-Dichloropropane	ND	0.000333	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1-Dichloropropene	ND	0.000351	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Hexachlorobutadiene	ND	0.000387	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Isopropylbenzene	ND	0.000444	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
4-Isopropyltoluene	ND	0.000743	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Methylene chloride	0.000565	0.000473	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
n-Butylbenzene	ND	0.000786	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Hexanone	ND	0.000398	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
n-Propylbenzene	0.000469	0.000359	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
sec-Butylbenzene	0.000766	0.000484	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Styrene	ND	0.000317	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
4-Methyl-2-pentanone	ND	0.000809	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
tert-Butylbenzene	ND	0.000294	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000312	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505003-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-5 (22-24')
Collection Date: 4/29/2015 1:10:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000421	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Tetrachloroethene (PCE)	ND	0.000380	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
trans-1,2-DCE	ND	0.000310	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
trans-1,3-Dichloropropene	ND	0.000250	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,3-Trichlorobenzene	ND	0.000701	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,4-Trichlorobenzene	ND	0.000718	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1,1-Trichloroethane	ND	0.000272	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1,2-Trichloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Trichloroethene (TCE)	ND	0.000381	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Trichlorofluoromethane	ND	0.000387	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,3-Trichloropropane	ND	0.000673	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Vinyl chloride	ND	0.000219	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Surr: 1,2-Dichloroethane-d4	90.9	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
Surr: Toluene-d8	81.3	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.87	3.5		mg/Kg-dr	1	5/5/2015 8:10:29 PM	R25982
Surr: BFB	106	0	67.4-150		%REC	1	5/5/2015 8:10:29 PM	R25982

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-001C SWMU 10-5 0-2 FT

Project # :

Collected By :
Collection Date : 04/29/15 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	5.7	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.1	0.10	su	9045D	05/08/15	1

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

Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-01 (PH) - 8.1 at 21.0c

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 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-002C SWMU 10-5 2-4 FT

Project # :

Collected By :
Collection Date : 04/29/15 12:12

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	130		mV	2580 B-2011	05/10/15	1
pH	8.5	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-02 (PH) - 8.5 at 20.7c

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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-003C SWMU 10-5 4-6 FT

Project # :

Collected By :
Collection Date : 04/29/15 12:32

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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L762976-03 (PH) - 8.3 at 20.9c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-04

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-004C SWMU 10-5 14-16 FT

Project # :

Collected By :
Collection Date : 04/29/15 12:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-04 (PH) - 8.3 at 21.0c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-05

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-005C SWMU 10-5 22-24 FT

Project # :

Collected By :
Collection Date : 04/29/15 13:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	120		mV	2580 B-2011	05/10/15	1
pH	9.2	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-05 (PH) - 9.2 at 20.7c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762976

May 13, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG787134	05/09/15 04:55
Cyanide	< .25	mg/kg			WG787733	05/12/15 10:23
Cyanide	< .25	mg/kg			WG787856	05/12/15 12:46

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L762972-07	WG787134
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L763578-02	WG787856
Cyanide	mg/kg	0.0	0.0	0.0	20	L763853-01	WG787856

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
Chromium,Hexavalent	mg/kg	59.8	66.4	111.	80-120	WG787134
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733
Cyanide	mg/kg	101	108.	107.	50-150	WG787856

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
Chromium,Hexavalent	mg/kg	66.6	66.4	111.	80-120	0.301	20	WG787134
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762976

May 13, 2015

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/kg	112.	108.	111.	50-150	3.64	20	WG787856

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.3	0.0	20	96.0	75-125	L762972-07	WG787134
Cyanide	mg/kg	3.27	0.0	3.33	98.0	80-120	L763578-01	WG787856

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.5	19.3	97.5	75-125	1.03	20	L762972-07	WG787134
Cyanide	mg/kg	3.18	3.27	95.5	80-120	2.79	20	L763578-01	WG787856

Batch number /Run number / Sample number cross reference

WG787168: R3035796: L762976-01 02 03 04 05
WG787134: R3035910: L762976-01 02 03 04 05
WG787860: R3036066: L762976-01 02 03 04 05
WG787733: R3036388: L762976-01 02 03 05
WG787856: R3036409: L762976-04

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19040**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.4	57.9	140			

Sample ID **LCS-19040**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769702** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

nt: Western Refining Company

Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0091	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.054	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.038	0.50								J
[illegible]n disulfide	ND	0.50								
[illegible]on tetrachloride	ND	0.050								
Chlorobenzene	0.0048	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**
08-Oct-15

nt: Western Refining Company
Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,4-Trichlorobenzene	ND	0.10								
1,2,3-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	97.5	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Chlorobenzene	1.0	0.050	1.000	0	99.7	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

nt: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	123	60.6	134			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.3	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1[illegible] Trimethylbenzene	ND	0.050								
[illegible]chloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**	
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**	
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
[illegible]yl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **1505003-005AMS** SampType: **MS** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **SWMU 10-5 (22-24')** Batch ID: **19032** RunNo: **26013**

Prep Date: **5/4/2015** Analysis Date: **5/6/2015** SeqNo: **771126** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0117	0.00223	0.01114	0.01785	-55.6	33.4	127			S
Toluene	0.0118	0.00223	0.01114	0.01116	5.42	24.8	130			S
Chlorobenzene	0.0107	0.00223	0.01114	0	96.5	25.8	132			
1,1-Dichloroethene	0.0121	0.00223	0.01114	0	109	70	130			
Trichloroethene (TCE)	0.0112	0.00223	0.01114	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	0.0232		0.02784		83.3	70	130			
Surr: 4-Bromofluorobenzene	0.0258		0.02784		92.6	70	130			
Surr: Dibromofluoromethane	0.0254		0.02784		91.1	70	130			
Surr: Toluene-d8	0.0263		0.02784		94.3	70	130			

Sample ID **1505003-005amsd** SampType: **MSD** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **SWMU 10-5 (22-24')** Batch ID: **19032** RunNo: **26013**

Prep Date: **5/4/2015** Analysis Date: **5/6/2015** SeqNo: **771127** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0140	0.00226	0.01129	0.01785	-34.0	33.4	127	18.3	20	S
Toluene	0.0133	0.00226	0.01129	0.01116	19.0	24.8	130	12.3	20	S
C[illegible]benzene	0.0121	0.00226	0.01129	0	107	25.8	132	12.0	20	
[illegible]chloroethene	0.0146	0.00226	0.01129	0	129	70	130	18.7	20	
Trichloroethene (TCE)	0.0137	0.00226	0.01129	0	121	70	130	19.9	20	
Surr: 1,2-Dichloroethane-d4	0.0248		0.02823		87.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.0272		0.02823		96.3	70	130	0	0	
Surr: Dibromofluoromethane	0.0274		0.02823		97.0	70	130	0	0	
Surr: Toluene-d8	0.0269		0.02823		95.4	70	130	0	0	

Sample ID **lcs-19032** SampType: **LCS** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **LCSS** Batch ID: **19032** RunNo: **26013**

Prep Date: **5/4/2015** Analysis Date: **5/6/2015** SeqNo: **771128** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

nt: Western Refining Company

Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**	
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**	
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
[illegible]none	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**	
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**	
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**	
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
[illegible]enzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**	
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19026**	SampType: **LCS**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **LCSS**	Batch ID: **19026**		RunNo: **26053**		
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**		SeqNo: **772521**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.20	1.670	0	88.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.8	52.3	122			
2-Chlorophenol	2.6	0.20	3.330	0	77.2	49.9	115			
1,4-Dichlorobenzene	1.4	0.20	1.670	0	84.4	43.7	107			
2,4-Dinitrotoluene	1.3	0.50	1.670	0	77.6	36	106			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.3	39.5	110			
4-Nitrophenol	3.0	0.25	3.330	0	90.2	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	73.7	23.7	111			
Phenol	2.9	0.20	3.330	0	86.4	52.7	119			
Pyrene	1.3	0.20	1.670	0	76.9	50.4	116			
1,2,4-Trichlorobenzene	1.6	0.20	1.670	0	98.3	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19078**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**
Client ID:	**PBS**	Batch ID:	**19078**	RunNo:	**26010**
Prep Date:	**5/6/2015**	Analysis Date:	**5/6/2015**	SeqNo:	**771069** Units: **mg/Kg**

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

Sample ID	**LCS-19078**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**
Client ID:	**LCSS**	Batch ID:	**19078**	RunNo:	**26010**
Prep Date:	**5/6/2015**	Analysis Date:	**5/6/2015**	SeqNo:	**771070** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19080	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals
Client ID:	PBS	Batch ID:	19080	RunNo:	26050
Prep Date:	5/6/2015	Analysis Date:	5/7/2015	SeqNo:	772227
				Units:	mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	0.13	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	0.74	2.5								J

Sample ID	LCS-19080	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals
Client ID:	LCSS	Batch ID:	19080	RunNo:	26050
Prep Date:	5/6/2015	Analysis Date:	5/7/2015	SeqNo:	772228
				Units:	mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	103	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	27	0.15	25.00	0	107	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	99.2	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	99.4	80	120			
Silver	5.4	0.25	5.000	0	107	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range
Client ID:	PBS	Batch ID:	R25941	RunNo:	25941
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	770909
				Units:	mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range
Client ID:	LCSS	Batch ID:	R25941	RunNo:	25941
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	770910
				Units:	mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	79.9	135			
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID	1505003-001B MS	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range
Client ID:	SWMU 10-5 (0-2')	Batch ID:	R25941	RunNo:	25941
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770912
				Units:	mg/Kg-dry

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	3.1	15.53	2.485	108	65.2	156			
Surr: BFB	340		310.7		109	67.4	150			

Sample ID	1505003-001B MSD	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range
Client ID:	SWMU 10-5 (0-2')	Batch ID:	R25941	RunNo:	25941
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770913
				Units:	mg/Kg-dry

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	3.1	15.53	2.485	103	65.2	156	4.31	20	
Surr: BFB	340		310.7		110	67.4	150	0	0	

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range
Client ID:	PBS	Batch ID:	R25982	RunNo:	25982
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771006
				Units:	mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.7	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range
Client ID:	LCSS	Batch ID:	R25982	RunNo:	25982
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771007
				Units:	mg/Kg

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505003**

08-Oct-15

nt: Western Refining Company

Project: SWMU 10

Sample ID	**2.5ug gro lcs**	SampType:	**LCS**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**
Client ID:	**LCSS**	Batch ID:	**R25982**	RunNo:	**25982**
Prep Date:		Analysis Date:	**5/5/2015**	SeqNo:	**771007**
				Units:	**mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Sample ID	**1505003-005B MS**	SampType:	**MS**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**
Client ID:	**SWMU 10-5 (22-24')**	Batch ID:	**R25982**	RunNo:	**25982**
Prep Date:		Analysis Date:	**5/5/2015**	SeqNo:	**771030**
				Units:	**mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	15	3.5	17.27	0	88.7	65.2	156			
Surr: BFB	380		345.4		111	67.4	150			

Sample ID	**1505003-005B MSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D Mod: Gasoline Range**
Client ID:	**SWMU 10-5 (22-24')**	Batch ID:	**R25982**	RunNo:	**25982**
Prep Date:		Analysis Date:	**5/5/2015**	SeqNo:	**771031**
				Units:	**mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	14	3.5	17.27	0	83.7	65.2	156	5.75	20	
Surr: BFB	380		345.4		109	67.4	150	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505003 RcptNo: 1

Received by/date: 04/30/15

Logged By: Lindsay Mangin 4/30/2015 3:50:00 PM

Completed By: Lindsay Mangin 5/1/2015 6:34:19 AM

Reviewed By: 05/01/15

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

Person Notified: _____ Date _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1) GRO/DRO & MRO	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4-29-15	1200	SOIL	SWMU 10-5 (0-2')	JARS-2	NEAT	-001			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-001										✓					
				VIALS-2	SOBI	-001										✓					
	1212	SOIL	SWMU 10-5 (2-4')	JARS-2	NEAT	-002			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-002										✓					
				VIALS-2	SOBI	-002										✓					
	1232	SOIL	SWMU 10-5 (4-6')	JARS-2	NEAT	-003			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-003										✓					
				VIALS-2	SOBI	-003										✓					
	1250	SOIL	SWMU 10-5 (14-16')	JARS-2 ~~VIALS~~	NEAT	-004			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-004										✓					
↓				VIALS-2	SOBI	-004										✓					

Date:	Time:	Relinquished by:	Received by:	Date Time
4-30-15	0800			04/
Date:	Time:	Relinquished by:	Received by:	Date Time
4-30-15	1600			04/30/15 1550

Remarks:

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: [redacted]
Sample Temperature: [redacted]

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	[redacted]	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1) GRO/DRO & MRO	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4.29.15	1310	SOIL	SWMU 10-5 (22-24')	JARS-2	NEAT	-005			✓							✓	✓	✓			
↓	↓	↓	↓	VIALS-2	MeOH	-005										✓					
↓	↓	↓	↓	VIALS-2	SOB1	-005										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
4.30.15	0800	[signature]	[signature]	4/30/15	1300
Date:	Time:	Relinquished by:	Received by:	Date	Time
4/30/15	1550	[signature]	[signature]	04/30/15	1550

Remarks:

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

November 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505003

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/30/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
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Website: www.hallenvironmental.com

Case Narrative

WO#: **1505003**
Date: **11/5/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding Hexavalent Chromium:
This report is an addendum to the original report, with an updated value for hexavalent chromium. The original result of 5.7 mg/kg, for sample SWMU 10-5 (0-2'), was in question because of previous suspected false positive results. An alternate laboratory was used for the analysis. Sample SWMU 10-5 (0-2') is less than 1.0mg/kg from the alternate laboratory.

ANALYTICAL SUMMARY REPORT

August 24, 2015

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B15080963

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 8/11/2015 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B15080963-001	1505003-001C, SWMU 10-5 (0-2 Feet)	04/29/15 12:00	08/11/15	Solid	Chromium, Hexavalent Water Extraction for Hex Chromium

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Corporate Quality Assurance Officer

Digitally signed by
Andy Valkenburg
Date: 2015.08.24 14:42:19 -06:00

CLIENT: Hall Environmental
Project: Not Indicated
Work Order: B15080963

Report Date: 08/24/15

CASE NARRATIVE

Level IV reporting was requested. Included with the analysis reports are instrument data reports for all analysis associated with the instrument calibration, QC sample analysis, and sample analysis. Copies of the detailed laboratory records for the analyses are sorted by method, instrument, and then analysis time. All analytical data is within method QA/QC specifications except as noted on analyses and/or QC summary reports, or in this narrative. The detailed report format with the instrument data identifies which QC batch ID and sequence QC are associated with each analysis result for a sample.

Inclusion of the raw data will be found with the attached data files. The results of this Analytical Report relate only to the items submitted for analysis. Only the raw data associated with parameters listed on this report should be validated.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1505003-001C, SWMU 10-5 (0-2 Feet)
Project: Not Indicated
Matrix: Solid

Lab ID: B15080963-001
Collection Date: 04/29/15 12:00
DateReceived: 08/11/15
Report Date: 08/24/15

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1		SW7196A	08/12/15 15:00 / ma	08/12/15 11:30	Water Extr	SPEC_150812C	6	92222

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: Hall Environmental
Work Order: B15080963
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 92222

Date: *24-Aug-15*

Run ID :Run Order: **SPEC_150812C: 5** SampType: **Method Blank** Lab ID: **MB-92222** Method: **SW7196A**
Analysis Date: **08/12/15 15:00** Units: **mg/kg** **Prep Info:** Prep Date: **8/12/2015** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	ND	0.01									

Associated samples: **B15080963-001A**

Run ID :Run Order: **SPEC_150812C: 7** SampType: **Sample Matrix Spike** Lab ID: **B15080963-001AMS** Method: **SW7196A**
Analysis Date: **08/12/15 15:00** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.751	1.0	1	0	75	70	130				

Associated samples: **B15080963-001A**

Run ID :Run Order: **SPEC_150812C: 8** SampType: **Sample Matrix Spike Duplicate** Lab ID: **B15080963-001AMSD** Method: **SW7196A**
Analysis Date: **08/12/15 15:00** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.713	1.0	1	0	71	70	130	0.7512		20	

Associated samples: **B15080963-001A**

Run ID :Run Order: **SPEC_150812C: 9** SampType: **Sample Duplicate** Lab ID: **B15080963-001ADUP** Method: **SW7196A**
Analysis Date: **08/12/15 15:00** Units: **mg/kg** **Prep Info:** Prep Date: **8/12/2015** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	ND	1.0		0				0		30	

Associated samples: **B15080963-001A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

Hall Environmental

B15080963

Login completed by: Randa Nees
Reviewed by: BL2000\tedwards
Reviewed Date: 8/12/2015

Date Received: 8/11/2015
Received by: jrz
Carrier name: Return-UPS NDA

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	1.8°C Blue Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

Hall Environmental Analysis Laboratory
4901 H[illegible] NE
Albuquerque, [illegible]7109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Bil-Energy	COMPANY: Energy Laboratories	PHONE: (800) 735-4489	FAX: (406) 252-6069
ADDRESS: 1120 South 27th Street		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: Billings, MT 59107			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1505003-001C	SWMU 10-5 (0-2')	8OZGU	Soil	4/29/2015 12:00:00 PM	1	Cr6- LEVEL 4. B15080963-001

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
	8/10/2015	3:06 PM			
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By: [illegible]	Date: 8/11/15	Time: 0915

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 1.8 °C Attempt to Cool? BLUE ICE
Comments: RTRN UPS NDA / SEALON COOLER

Energy Laboratories Inc

ANALYTICAL RUN Summary

24-Aug-15

Run ID SPEC_150812C

Run Start Date: 8/12/2015 3:00:00 P
Analyst: Mark A Spitzer
Ical:
Column ID:
Comments:

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
9781583	CCB	CR-HEX-W	CCB		8/12/2015 3:00:0	1	R247670		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.0002	0.0002		0	0	0	0.000557	0.01	0	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
9781584	CCV	CR-HEX-W	CCV		8/12/2015 3:00:0	1	R247670		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.1059	0.1059		0.1	0	0	0.000557	0.01	0	106%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
9781585	MB-R247670	CR-HEX-W	MBLK		8/12/2015 3:00:0	1	R247670		0	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.0002	0		0	0	0	0.004	0.01	0	0%	0	0	0%	

Seq No	Lab ID	Test Code	Sample Typ	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist
9781586	LCS-R247670	CR-HEX-W	LCS		8/12/2015 3:00:0	1	R247670		1E+07	0	

Analyte	T	Units	RAW	Final	Text	Spike	SPKref	RPDref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.0988	0.0988		0.1	0	0	0.004	0.01	0	99%	85	115	0%	

Hexavalent Chromium (Cr6+) in Soil and Water SM3500-Cr B

Analyst: MAS Analysis Date: 11/5/14 Time: 3:30 PM

Calibration Standard: ME1406020 Reference Std: ME1402258

Calibration Date Used: new calibration Color Reagent: ME1410208

pH (0.7-1.3)	SAMPLE ID	Pfactor	D.F.	Turb. Blk	Sample Abs.	Sample Conc mg/L	Corrected Conc.
✓	0				-.005		
✓	0.01 * 0.1mL of ME1406020 diluted to 10mL				-.001		
✓	0.1 * 1mL of ME1406020 diluted to 10mL				0.082		
✓	0.25 * 2.5mL of ME1406020 diluted to 10mL				0.209		

Hexavalent Chromium (Cr6+) in Soil and Water SM3500-Cr B

Analyst: MAS Analysis Date: 8/12/15 Time: 3:00 PM
Instrument: Spec
Calibration Standard: ME150226B Reference Std: ME150226A
Calibration Date Used: 11-5-14 Color Reagent: ME150812C

pH (0.7-1.3)	SAMPLE ID	Pfactor	D.F.	Turb. Blk	Sample Abs.	Sample Conc mg/L	Corrected Conc.
✓	CBLK					AZ	
✓	CCB					.0002	
✓	CCV					.1059	
✓	MBLK					.0002	
✓	0.1 LFB					.0988	
✓	MB-92222					.0006	
✓	B15080963-001A			.0535		.0442	-.0093
✓	-MS			↓		.1290	.0755
✓	-MSD			↓		.1252	.0717
✓	B15080963-001ADup			.0171		.0170	-.0001
✓	CCB					.0016	
✓	CCV					.1078	

PR. ' BATCH REPORT

Prep Code: **CR-HEX-S-WATER-EX** Technician: **Mark A Spitzer** Prep Start Date: **8/12/2015 11:30:29 A**

Prep Batch **92222** Prep Temp **NA °C** Batch Units: **G** Prep End Date: **8/12/2015 2:49:00 PM**

Sample ID	Matrix	pH	Initial Samp Amt	Sol Added	Sol Recovered	Final Vol (mL)	Factor	Balance	Prep Start Date	Prep End Date
MB-92222			100	0	0	100	1		8/12/2015	8/12/2015
B15080963-001A	Solid		10	0	0	100	9.95024876		8/12/2015	8/12/2015
B15080963-001ADUP	Solid		10	0	0	100	9.98003992		8/12/2015	8/12/2015

Energy Laboratories Inc

Standard LOG

Standard ID:	ME150226A		
Standard Name	HEX Cr 1.0 mg/L QCS	Type:	Secondary
Date Prepared	2/26/2015	BY:	Mark A Spitzer
Date Expires:	2/26/2016		
Department	ME	Status:	New
Vendor:			
Lot Number:			
Balance ID:			

Comments:

Final Volume: 250 mL

Stock Source		Base Units	Amount Added
ETC0311	Cr 6+ Stock Ref Solution	ug/mL	5 mL

Analytes		CAS	Conc: ug/mL
A	Chromium, Hexavalent	18540-29-9	0

Energy Laboratories Inc

Standard LOG

Standard ID:	ME150226B		
Standard Name	HEX Cr 1.0 mg/L STD	Type:	Secondary
Date Prepared	2/26/2015	BY:	Mark A Spitzer
Date Expires:	2/26/2016		
Department	ME	Status:	Open
Vendor:			
Lot Number:			
Balance ID:			

Comments:

Final Volume: 250 mL

Stock Source		Base Units	Amount Added
ETC0310	CR6+ STOCK	ug/mL	0.5 mL

Analytes		CAS	Conc: ug/mL
A	Chromium, Hexavalent	18540-29-9	0

Energy Laboratories Inc

Standard LOG

Standard ID:	ME150812C		
Standard Name	Hex chrome color reagent	Type:	
Date Prepared	8/12/2015	BY:	Mark A Spitzer
Date Expires:	8/12/2016		
Department	ME	Status:	Open
Vendor:			
Lot Number:			
Balance ID:	4-place Balance		
Comments:	Diluted to 40 mL in acetone		

Chemical / Solvent Used	BottleNo	Amt	Units
1,5-Diphenylcarbohydrazide	1925	0.2	g

Final Volume: 40 mL

Stock Source	Base Units	Amount Added
Analytes	CAS	Conc: ug/mL

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505003 RcptNo: 1

Received by/date: 04/30/15

Logged By: Lindsay Mangin 4/30/2015 3:50:00 PM

Completed By: Lindsay Mangin 5/1/2015 6:34:19 AM

Reviewed By: 05/01/15

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

Person Notified: _____ Date _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
[redacted]

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	[redacted]	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) GRO/DRO & MRO	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4.29.15	1200	SOIL	SWMU 10-5 (0-2')	JARS-2	NEAT	-001			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-001										✓					
	↓	↓	↓	VIALS-2	SOBI	-001										✓					
	1212	SOIL	SWMU 10-5 (2-4')	JARS-2	NEAT	-002			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-002										✓					
	↓	↓	↓	VIALS-2	SOBI	-002										✓					
	1232	SOIL	SWMU 10-5 (4-6')	JARS-2	NEAT	-003			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-003										✓					
	↓	↓	↓	VIALS-2	SOBI	-003										✓					
	1250	SOIL	SWMU 10-5 (14-16')	JARS-2 ~~VIALS~~	NEAT	-004			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-004										✓					
↓	↓	↓	↓	VIALS-2	SOBI	-004										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
4.30.15	0800	[signature]	[signature]	04/	
4.30.15	1100	[signature]	[signature]	04/30/15	1550

Remarks:

If [illegible] samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: [redacted]
Sample Temperature: [redacted]

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	[redacted]	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) (GRO/DRO & MRO)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4.29.15	1310	SOIL	SWMU 10-5 (22-24')	JARS-2	NEAT	-005			✓							✓	✓	✓			
↓	↓	↓	↓	VIALS-2	MeOH	-005										✓					
				VIALS-2	SOB1	-005										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
4.30.15	0800	[signature]	[signature]	4-30-15	1300
4-30-15	1550	[signature]	[signature]	04/30/15	1550

Remarks:

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

October 08, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505004

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 11, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

Case Narrative

WO#: **1505004**
Date: **10/8/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding Surrogate "S" Flags:
The surrogates were not recoverable in the following samples due to sample dilution and/or matrix interferences:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (0-2')
Collection Date: 4/29/2015 3:30:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	160	26	47		mg/Kg-dr	5	5/7/2015 7:22:44 PM	19040
Motor Oil Range Organics (MRO)	330	240	240		mg/Kg-dr	5	5/7/2015 7:22:44 PM	19040
Surr: DNOP	114	0	57.9-140		%REC	5	5/7/2015 7:22:44 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	11	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.034	0.0031	0.035	J	mg/Kg-dr	1	5/6/2015 3:40:56 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Arsenic	1.4	0.68	5.7	J	mg/Kg-dr	2	5/7/2015 1:41:14 PM	19081
Barium	460	0.068	0.23		mg/Kg-dr	2	5/7/2015 1:41:14 PM	19081
Beryllium	0.71	0.0085	0.17		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Chromium	14	0.069	0.34		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Cobalt	3.8	0.043	0.34		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Iron	10000	69	290		mg/Kg-dr	100	5/7/2015 11:10:57 AM	19081
d	3.8	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Manganese	440	0.13	0.23		mg/Kg-dr	2	5/7/2015 1:41:14 PM	19081
Nickel	6.5	0.15	0.57		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Vanadium	17	0.038	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Zinc	29	0.74	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Aniline	ND	0.097	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzyl alcohol	ND	0.099	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (0-2')
Collection Date: 4/29/2015 3:30:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.086	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,3-Dichlorobenzene	ND	0.099	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
3,3'-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dinitrophenol	ND	0.047	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachlorocyclopentadiene	ND	0.078	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachloroethane	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (0-2')
Collection Date: 4/29/2015 3:30:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Nitrophenol	ND	0.096	0.28		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Surr: 2-Fluorophenol	61.2		26.4-129		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: Phenol-d5	64.4		34.8-118		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: 2,4,6-Tribromophenol	66.9		26.8-128		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: Nitrobenzene-d5	61.0		35.8-124		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: 2-Fluorobiphenyl	66.9		24.5-139		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: 4-Terphenyl-d14	72.6		29.4-129		%REC	1	5/8/2015 7:50:14 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00118	0.000434	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Toluene	0.00263	0.000200	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Ethylbenzene	0.000703	0.000324	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Xylenes, Total	0.00182	0.00115	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000807	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,4-Trimethylbenzene	0.000770	0.000503	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,3,5-Trimethylbenzene	0.000347	0.000338	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000516	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000230	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Naphthalene	ND	0.000629	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1-Methylnaphthalene	ND	0.000756	0.00385		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Methylnaphthalene	ND	0.000752	0.00385		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Acetone	0.0237	0.00120	0.00963		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Bromobenzene	ND	0.000536	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (0-2')
Collection Date: 4/29/2015 3:30:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000260	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Bromoform	ND	0.000499	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Bromomethane	ND	0.00114	0.00289		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Butanone	0.00407	0.000616	0.00963	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Carbon tetrachloride	ND	0.000348	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chlorobenzene	ND	0.000195	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chloroform	ND	0.000397	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chloromethane	ND	0.000227	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Chlorotoluene	ND	0.000376	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Carbon disulfide	ND	0.000871	0.00963		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
4-Chlorotoluene	ND	0.000371	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
cis-1,2-DCE	ND	0.000509	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
cis-1,3-Dichloropropene	ND	0.00193	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000566	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Dibromochloromethane	ND	0.000216	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Dibromomethane	ND	0.00109	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Dichlorobenzene	ND	0.000427	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,3-Dichlorobenzene	ND	0.000326	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,4-Dichlorobenzene	ND	0.000302	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Dichlorodifluoromethane	ND	0.000786	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1-Dichloroethane	ND	0.000450	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1-Dichloroethene	ND	0.000321	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dichloropropane	ND	0.000411	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,3-Dichloropropane	ND	0.000300	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2,2-Dichloropropane	ND	0.000334	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1-Dichloropropene	ND	0.000353	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Hexachlorobutadiene	ND	0.000388	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Isopropylbenzene	ND	0.000447	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
4-Isopropyltoluene	ND	0.000747	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Methylene chloride	0.000606	0.000476	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
n-Butylbenzene	ND	0.000790	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Hexanone	0.000886	0.000400	0.00963	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
n-Propylbenzene	ND	0.000360	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
sec-Butylbenzene	0.000645	0.000486	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Styrene	ND	0.000319	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
4-Methyl-2-pentanone	ND	0.000813	0.00963		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
tert-Butylbenzene	ND	0.000295	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000313	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (0-2')
Collection Date: 4/29/2015 3:30:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000423	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Tetrachloroethene (PCE)	ND	0.000382	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
trans-1,2-DCE	ND	0.000311	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
trans-1,3-Dichloropropene	ND	0.000252	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,3-Trichlorobenzene	ND	0.000704	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,4-Trichlorobenzene	ND	0.000721	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1,1-Trichloroethane	ND	0.000274	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1,2-Trichloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Trichloroethene (TCE)	ND	0.000383	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Trichlorofluoromethane	ND	0.000389	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,3-Trichloropropane	ND	0.000676	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Vinyl chloride	ND	0.000220	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Surr: 1,2-Dichloroethane-d4	96.7	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
Surr: 4-Bromofluorobenzene	95.2	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
Surr: Dibromofluoromethane	102	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
Surr: Toluene-d8	95.0	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
soline Range Organics (GRO)	ND	0.85	3.4		mg/Kg-dr	1	5/6/2015 12:29:48 AM	R25982
Surr: BFB	111	0	67.4-150		%REC	1	5/6/2015 12:29:48 AM	R25982

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (2-4')
Collection Date: 4/29/2015 3:40:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	4100	54	98		mg/Kg-dr	10	5/7/2015 4:40:23 PM	19040
Motor Oil Range Organics (MRO)	690	490	490		mg/Kg-dr	10	5/7/2015 4:40:23 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/7/2015 4:40:23 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	21	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0082	0.0037	0.042	J	mg/Kg-dr	1	5/6/2015 3:42:49 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.7	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Arsenic	1.9	0.37	3.2	J	mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Barium	390	0.076	0.26		mg/Kg-dr	2	5/7/2015 1:44:10 PM	19081
Beryllium	0.98	0.0094	0.19		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Cadmium	ND	0.035	0.13		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Chromium	9.9	0.077	0.38		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Cobalt	4.8	0.048	0.38		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Iron	14000	77	320		mg/Kg-dr	100	5/7/2015 11:12:19 AM	19081
ıd	3.5	0.14	0.32		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Manganese	310	0.075	0.13		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Nickel	8.3	0.16	0.64		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Selenium	ND	2.0	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Silver	ND	0.038	0.32		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Vanadium	20	0.043	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Zinc	16	0.82	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benz(a)anthracene	ND	0.092	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (2-4')
Collection Date: 4/29/2015 3:40:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
3,3'-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Fluorene	0.22	0.16	0.24	J	mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachlorocyclopentadiene	ND	0.081	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1-Methylnaphthalene	3.6	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Methylnaphthalene	0.42	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (2-4')
Collection Date: 4/29/2015 3:40:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Phenanthrene	0.80	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Surr: 2-Fluorophenol	72.0		26.4-129		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: Phenol-d5	71.2		34.8-118		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: 2,4,6-Tribromophenol	40.6		26.8-128		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: Nitrobenzene-d5	73.1		35.8-124		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: 2-Fluorobiphenyl	67.6		24.5-139		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: 4-Terphenyl-d14	80.2		29.4-129		%REC	1	5/8/2015 8:18:21 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0049	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Toluene	ND	0.0039	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Ethylbenzene	0.0041	0.0030	0.033	J	mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.0046	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,4-Trimethylbenzene	ND	0.0016	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,3,5-Trimethylbenzene	0.11	0.0022	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dichloroethane (EDC)	ND	0.013	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dibromoethane (EDB)	ND	0.0026	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Naphthalene	ND	0.0078	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1-Methylnaphthalene	2.9	0.020	0.13		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Methylnaphthalene	0.69	0.022	0.13		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Acetone	ND	0.024	0.49		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Bromobenzene	ND	0.0024	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Bromodichloromethane	ND	0.0027	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (2-4')
Collection Date: 4/29/2015 3:40:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0026	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Bromomethane	ND	0.0063	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Butanone	ND	0.021	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Carbon disulfide	ND	0.024	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Carbon tetrachloride	ND	0.0032	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chlorobenzene	ND	0.0025	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chloroethane	ND	0.025	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chloroform	ND	0.0034	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chloromethane	ND	0.0038	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Chlorotoluene	ND	0.0037	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
4-Chlorotoluene	ND	0.0025	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
cis-1,2-DCE	ND	0.0041	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
cis-1,3-Dichloropropene	ND	0.0023	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.0056	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Dibromochloromethane	ND	0.0025	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Dibromomethane	ND	0.0034	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dichlorobenzene	ND	0.0020	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,3-Dichlorobenzene	ND	0.0039	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Dichlorobenzene	ND	0.0041	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Dichlorodifluoromethane	ND	0.0082	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1-Dichloroethane	ND	0.013	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1-Dichloroethene	ND	0.0023	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dichloropropane	ND	0.0018	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,3-Dichloropropane	ND	0.0045	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2,2-Dichloropropane	ND	0.0048	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1-Dichloropropene	ND	0.0049	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Hexachlorobutadiene	ND	0.0045	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Hexanone	ND	0.0080	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Isopropylbenzene	ND	0.0028	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
4-Isopropyltoluene	ND	0.0023	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
4-Methyl-2-pentanone	ND	0.0057	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Methylene chloride	ND	0.013	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
n-Butylbenzene	ND	0.0028	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
n-Propylbenzene	ND	0.0024	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
sec-Butylbenzene	ND	0.0047	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Styrene	ND	0.0060	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
tert-Butylbenzene	ND	0.0037	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.0027	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.0040	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (2-4')
Collection Date: 4/29/2015 3:40:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0028	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
trans-1,2-DCE	ND	0.0021	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
trans-1,3-Dichloropropene	ND	0.0059	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,3-Trichlorobenzene	ND	0.0070	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,4-Trichlorobenzene	ND	0.0060	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,1-Trichloroethane	ND	0.0050	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,2-Trichloroethane	ND	0.0039	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Trichloroethene (TCE)	ND	0.0032	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Trichlorofluoromethane	ND	0.0099	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,3-Trichloropropane	ND	0.0055	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Vinyl chloride	ND	0.013	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Xylenes, Total	ND	0.0091	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Surr: Dibromofluoromethane	96.7		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
Surr: 1,2-Dichloroethane-d4	93.4		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
Surr: Toluene-d8	93.2		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
Surr: 4-Bromofluorobenzene	91.5		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	25	0.82	3.3		mg/Kg-dr	1	5/5/2015 3:52:38 AM	R25941
Surr: BFB	113	0	67.4-150		%REC	1	5/5/2015 3:52:38 AM	R25941

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (6-8')
Collection Date: 4/29/2015 3:50:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	9.9		mg/Kg-dr	1	5/5/2015 6:50:28 PM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/5/2015 6:50:28 PM	19040
Surr: DNOP	101	0	57.9-140		%REC	1	5/5/2015 6:50:28 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.017	0.0033	0.038	J	mg/Kg-dr	1	5/6/2015 3:44:32 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Arsenic	1.2	0.35	2.9	J	mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Barium	140	0.035	0.12		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Beryllium	0.84	0.0087	0.18		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Chromium	7.2	0.071	0.35		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Cobalt	4.0	0.045	0.35		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Iron	12000	71	290		mg/Kg-dr	100	5/7/2015 11:13:42 AM	19081
·d	2.2	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
...anganese	270	0.069	0.12		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Nickel	6.8	0.15	0.59		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Vanadium	15	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Zinc	13	0.76	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benz(a)anthracene	ND	0.090	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (6-8')
Collection Date: 4/29/2015 3:50:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
3,3'-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dimethylphenol	ND	0.090	0.35		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (6-8')
Collection Date: 4/29/2015 3:50:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Nitrophenol	ND	0.099	0.29		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Surr: 2-Fluorophenol	45.2		26.4-129		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: Phenol-d5	46.5		34.8-118		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: 2,4,6-Tribromophenol	41.3		26.8-128		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: Nitrobenzene-d5	43.7		35.8-124		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: 2-Fluorobiphenyl	42.4		24.5-139		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: 4-Terphenyl-d14	55.3		29.4-129		%REC	1	5/8/2015 5:58:11 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00190	0.000345	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Toluene	0.00162	0.000159	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Ethylbenzene	0.000421	0.000258	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Xylenes, Total	0.00118	0.000914	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Methyl tert-butyl ether (MTBE)	0.00139	0.000643	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,4-Trimethylbenzene	0.000406	0.000401	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,3,5-Trimethylbenzene	ND	0.000269	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000411	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000183	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Naphthalene	ND	0.000501	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1-Methylnaphthalene	ND	0.000602	0.00307		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Methylnaphthalene	ND	0.000599	0.00307		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Acetone	0.00619	0.000957	0.00766	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Bromobenzene	ND	0.000426	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (6-8')
Collection Date: 4/29/2015 3:50:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000207	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Bromoform	ND	0.000397	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Bromomethane	ND	0.000906	0.00230		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Butanone	0.00153	0.000491	0.00766	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Carbon tetrachloride	ND	0.000277	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chlorobenzene	ND	0.000155	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chloroethane	ND	0.00153	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chloroform	ND	0.000316	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chloromethane	ND	0.000181	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Chlorotoluene	ND	0.000299	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Carbon disulfide	ND	0.000694	0.00766		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
4-Chlorotoluene	ND	0.000295	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
cis-1,2-DCE	ND	0.000405	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
cis-1,3-Dichloropropene	ND	0.00153	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000450	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Dibromochloromethane	ND	0.000172	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Dibromomethane	ND	0.000870	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1 2-Dichlorobenzene	ND	0.000340	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Dichlorobenzene	ND	0.000260	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,4-Dichlorobenzene	ND	0.000241	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Dichlorodifluoromethane	ND	0.000626	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1-Dichloroethane	ND	0.000358	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1-Dichloroethene	ND	0.000256	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dichloropropane	ND	0.000327	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,3-Dichloropropane	ND	0.000239	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2,2-Dichloropropane	ND	0.000266	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1-Dichloropropene	ND	0.000281	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Hexachlorobutadiene	ND	0.000309	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Isopropylbenzene	ND	0.000356	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
4-Isopropyltoluene	ND	0.000595	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Methylene chloride	0.000529	0.000379	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
n-Butylbenzene	ND	0.000629	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Hexanone	0.000559	0.000319	0.00766	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
n-Propylbenzene	ND	0.000287	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
sec-Butylbenzene	0.000667	0.000387	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Styrene	ND	0.000254	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
4-Methyl-2-pentanone	ND	0.000647	0.00766		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
tert-Butylbenzene	ND	0.000235	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000249	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (6-8')
Collection Date: 4/29/2015 3:50:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000337	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Tetrachloroethene (PCE)	ND	0.000304	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
trans-1,2-DCE	ND	0.000248	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
trans-1,3-Dichloropropene	ND	0.000200	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,3-Trichlorobenzene	ND	0.000561	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,4-Trichlorobenzene	ND	0.000574	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1,1-Trichloroethane	ND	0.000218	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1,2-Trichloroethane	ND	0.00153	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Trichloroethene (TCE)	ND	0.000305	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Trichlorofluoromethane	ND	0.000310	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,3-Trichloropropane	ND	0.000538	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Vinyl chloride	ND	0.000175	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Surr: 1,2-Dichloroethane-d4	98.7	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
Surr: 4-Bromofluorobenzene	110	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
Surr: Dibromofluoromethane	99.5	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
Surr: Toluene-d8	93.0	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.82	3.2		mg/Kg-dr	1	5/5/2015 1:26:29 PM	R25982
Surr: BFB	106	0	67.4-150		%REC	1	5/5/2015 1:26:29 PM	R25982

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (18-20')
Collection Date: 4/29/2015 4:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.7		mg/Kg-dr	1	5/5/2015 7:17:27 PM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/5/2015 7:17:27 PM	19040
Surr: DNOP	105	0	57.9-140		%REC	1	5/5/2015 7:17:27 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	13	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0040	0.0035	0.040	J	mg/Kg-dr	1	5/6/2015 3:46:17 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Arsenic	1.9	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Barium	230	0.034	0.11		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Beryllium	1.0	0.0085	0.17		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Chromium	15	0.069	0.34		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Cobalt	7.4	0.043	0.34		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Iron	21000	69	290		mg/Kg-dr	100	5/7/2015 11:15:06 AM	19081
...d	1.7	0.12	0.29		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
...anganese	770	0.34	0.57		mg/Kg-dr	5	5/8/2015 2:33:57 PM	19081
Nickel	16	0.15	0.57		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Vanadium	22	0.038	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Zinc	22	0.74	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Aniline	ND	0.099	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Anthracene	ND	0.097	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benz(a)anthracene	ND	0.089	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzoic acid	ND	0.065	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (18-20')
Collection Date: 4/29/2015 4:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.087	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Chloroaniline	ND	0.11	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Chrysene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
3,3'-Dichlorobenzidine	ND	0.088	0.28		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Dimethyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dimethylphenol	ND	0.089	0.34		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.062	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dinitrophenol	ND	0.047	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Fluorene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachlorocyclopentadiene	ND	0.079	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Methylphenol	ND	0.11	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (18-20')
Collection Date: 4/29/2015 4:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Nitrophenol	ND	0.098	0.28		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Pentachlorophenol	ND	0.071	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Pyridine	ND	0.096	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Surr: 2-Fluorophenol	73.9		26.4-129		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: Phenol-d5	73.0		34.8-118		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: 2,4,6-Tribromophenol	68.8		26.8-128		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: Nitrobenzene-d5	70.5		35.8-124		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: 2-Fluorobiphenyl	74.9		24.5-139		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: 4-Terphenyl-d14	83.9		29.4-129		%REC	1	5/7/2015 8:41:44 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0204	0.000418	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Toluene	0.0127	0.000193	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Ethylbenzene	0.00291	0.000312	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Xylenes, Total	0.00975	0.00111	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000777	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,4-Trimethylbenzene	0.00277	0.000484	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,3,5-Trimethylbenzene	0.00184	0.000325	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000497	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000222	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Naphthalene	0.000742	0.000606	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1-Methylnaphthalene	ND	0.000728	0.00371		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Methylnaphthalene	ND	0.000724	0.00371		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Acetone	0.00180	0.00116	0.00927	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Bromobenzene	ND	0.000516	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (18-20')
Collection Date: 4/29/2015 4:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000250	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Bromoform	ND	0.000480	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Bromomethane	ND	0.00110	0.00278		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Butanone	ND	0.000594	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Carbon tetrachloride	ND	0.000336	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chlorobenzene	ND	0.000188	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chloroethane	ND	0.00185	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chloroform	ND	0.000382	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chloromethane	ND	0.000219	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Chlorotoluene	ND	0.000362	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Carbon disulfide	ND	0.000839	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
4-Chlorotoluene	ND	0.000357	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
cis-1,2-DCE	ND	0.000490	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
cis-1,3-Dichloropropene	ND	0.00185	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000545	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Dibromochloromethane	ND	0.000208	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Dibromomethane	ND	0.00105	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dichlorobenzene	ND	0.000411	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Dichlorobenzene	ND	0.000314	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,4-Dichlorobenzene	ND	0.000291	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Dichlorodifluoromethane	ND	0.000757	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1-Dichloroethane	ND	0.000433	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1-Dichloroethene	ND	0.000309	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dichloropropane	ND	0.000396	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,3-Dichloropropane	ND	0.000289	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2,2-Dichloropropane	ND	0.000322	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1-Dichloropropene	ND	0.000339	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Hexachlorobutadiene	ND	0.000374	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Isopropylbenzene	0.000482	0.000430	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
4-Isopropyltoluene	ND	0.000719	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Methylene chloride	0.000612	0.000458	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
n-Butylbenzene	ND	0.000761	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Hexanone	ND	0.000386	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
n-Propylbenzene	0.000510	0.000347	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
sec-Butylbenzene	0.000714	0.000468	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Styrene	ND	0.000307	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
4-Methyl-2-pentanone	ND	0.000783	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
tert-Butylbenzene	ND	0.000284	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000302	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-4 (18-20')
Collection Date: 4/29/2015 4:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000408	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Tetrachloroethene (PCE)	ND	0.000367	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
trans-1,2-DCE	ND	0.000300	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
trans-1,3-Dichloropropene	ND	0.000242	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,3-Trichlorobenzene	ND	0.000678	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,4-Trichlorobenzene	ND	0.000695	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1,1-Trichloroethane	ND	0.000264	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1,2-Trichloroethane	ND	0.00185	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Trichloroethene (TCE)	ND	0.000368	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Trichlorofluoromethane	ND	0.000375	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,3-Trichloropropane	ND	0.000651	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Vinyl chloride	ND	0.000212	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Surr: 1,2-Dichloroethane-d4	98.0	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
Surr: Dibromofluoromethane	104	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
Surr: Toluene-d8	88.5	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.78	3.1		mg/Kg-dr	1	5/6/2015 12:58:35 AM	R25982
Surr: BFB	109	0	67.4-150		%REC	1	5/6/2015 12:58:35 AM	R25982

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

C...ENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-005 **Matrix:** SOIL

Client Sample ID: SWMU 10 DUP01
Collection Date: 4/29/2015
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	150	27	49		mg/Kg-dr	5	5/7/2015 9:10:40 PM	19040
Motor Oil Range Organics (MRO)	310	250	250		mg/Kg-dr	5	5/7/2015 9:10:40 PM	19040
Surr: DNOP	114	0	57.9-140		%REC	5	5/7/2015 9:10:40 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.035	0.0034	0.039	J	mg/Kg-dr	1	5/6/2015 3:55:17 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Arsenic	2.7	0.65	5.5	J	mg/Kg-dr	2	5/7/2015 1:57:09 PM	19081
Barium	380	0.066	0.22		mg/Kg-dr	2	5/7/2015 1:57:09 PM	19081
Beryllium	0.59	0.0082	0.17		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Chromium	16	0.066	0.33		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Cobalt	3.4	0.042	0.33		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Iron	9100	66	280		mg/Kg-dr	100	5/7/2015 11:24:22 AM	19081
d	3.6	0.12	0.28		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
...anganese	490	0.13	0.22		mg/Kg-dr	2	5/7/2015 1:57:09 PM	19081
Nickel	5.6	0.14	0.55		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Silver	ND	0.033	0.28		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Vanadium	21	0.037	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Zinc	24	0.71	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	3.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Acenaphthylene	ND	2.8	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Aniline	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Anthracene	ND	2.3	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Azobenzene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benz(a)anthracene	ND	2.2	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(a)pyrene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(b)fluoranthene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(g,h,i)perylene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(k)fluoranthene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzoic acid	ND	1.6	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzyl alcohol	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Bis(2-chloroethoxy)methane	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-005 **Matrix:** SOIL

Client Sample ID: SWMU 10 DUP01
Collection Date: 4/29/2015
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	2.7	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Bis(2-chloroisopropyl)ether	ND	2.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Bis(2-ethylhexyl)phthalate	ND	3.1	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Bromophenyl phenyl ether	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Butyl benzyl phthalate	ND	3.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Carbazole	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Chloro-3-methylphenol	ND	2.7	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Chloroaniline	ND	2.5	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Chloronaphthalene	ND	2.9	6.9		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Chlorophenol	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Chlorophenyl phenyl ether	ND	4.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Chrysene	ND	2.8	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Di-n-butyl phthalate	ND	3.1	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Di-n-octyl phthalate	ND	3.1	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Dibenz(a,h)anthracene	ND	3.0	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Dibenzofuran	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,2-Dichlorobenzene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,3-Dichlorobenzene	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,4-Dichlorobenzene	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
3,3'-Dichlorobenzidine	ND	2.1	6.9		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Diethyl phthalate	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Dimethyl phthalate	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dichlorophenol	ND	2.8	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dimethylphenol	ND	2.2	8.3		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4,6-Dinitro-2-methylphenol	ND	1.5	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dinitrophenol	ND	1.1	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dinitrotoluene	ND	2.5	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,6-Dinitrotoluene	ND	3.1	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Fluoranthene	ND	3.3	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Fluorene	ND	3.7	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachlorobenzene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachlorobutadiene	ND	2.7	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachlorocyclopentadiene	ND	1.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachloroethane	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Indeno(1,2,3-cd)pyrene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Isophorone	ND	2.9	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1-Methylnaphthalene	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Methylnaphthalene	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Methylphenol	ND	2.8	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 4/29/2015
Lab ID: 1505004-005
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
N-Nitrosodi-n-propylamine	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
N-Nitrosodiphenylamine	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Naphthalene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Nitroaniline	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
3-Nitroaniline	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Nitroaniline	ND	2.5	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Nitrobenzene	ND	2.8	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Nitrophenol	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Nitrophenol	ND	2.4	6.9		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Pentachlorophenol	ND	1.7	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Phenanthrene	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Phenol	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Pyrene	ND	3.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Pyridine	ND	2.3	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,2,4-Trichlorobenzene	ND	2.8	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4,5-Trichlorophenol	ND	3.2	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4,6-Trichlorophenol	ND	3.2	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/8/2015 8:46:25 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00104	0.000359	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Toluene	0.00232	0.000166	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Ethylbenzene	0.000638	0.000268	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Xylenes, Total	0.00171	0.000951	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000668	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,4-Trimethylbenzene	0.000972	0.000417	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,3,5-Trimethylbenzene	0.000422	0.000280	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000427	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000191	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Naphthalene	ND	0.000521	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1-Methylnaphthalene	ND	0.000626	0.00319		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Methylnaphthalene	ND	0.000623	0.00319		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Acetone	0.0166	0.000995	0.00797		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Bromobenzene	ND	0.000443	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505004-005 **Matrix:** SOIL

Client Sample ID: SWMU 10 DUP01
Collection Date: 4/29/2015
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000215	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Bromoform	ND	0.000413	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Bromomethane	ND	0.000942	0.00239		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Butanone	0.00253	0.000510	0.00797	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Carbon tetrachloride	ND	0.000288	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chlorobenzene	ND	0.000162	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chloroform	ND	0.000328	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chloromethane	ND	0.000188	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Chlorotoluene	ND	0.000311	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Carbon disulfide	ND	0.000721	0.00797		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
4-Chlorotoluene	ND	0.000307	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
cis-1,2-DCE	ND	0.000422	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
cis-1,3-Dichloropropene	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000468	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Dibromochloromethane	ND	0.000179	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Dibromomethane	ND	0.000905	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dichlorobenzene	ND	0.000354	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,3-Dichlorobenzene	ND	0.000270	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,4-Dichlorobenzene	ND	0.000250	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Dichlorodifluoromethane	ND	0.000651	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1-Dichloroethane	ND	0.000372	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1-Dichloroethene	ND	0.000266	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dichloropropane	ND	0.000341	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,3-Dichloropropane	ND	0.000248	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2,2-Dichloropropane	ND	0.000277	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1-Dichloropropene	ND	0.000292	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Hexachlorobutadiene	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Isopropylbenzene	ND	0.000370	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
4-Isopropyltoluene	ND	0.000619	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Methylene chloride	0.000510	0.000394	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
n-Butylbenzene	ND	0.000654	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Hexanone	0.000653	0.000332	0.00797	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
n-Propylbenzene	ND	0.000298	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
sec-Butylbenzene	0.000534	0.000403	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Styrene	ND	0.000264	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
4-Methyl-2-pentanone	ND	0.000673	0.00797		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
tert-Butylbenzene	ND	0.000244	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000259	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01
Project: SWMU 10
Collection Date: 4/29/2015
Lab ID: 1505004-005
Matrix: SOIL
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000350	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Tetrachloroethene (PCE)	ND	0.000316	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
trans-1,2-DCE	ND	0.000258	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
trans-1,3-Dichloropropene	ND	0.000208	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,3-Trichlorobenzene	ND	0.000583	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,4-Trichlorobenzene	ND	0.000597	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1,1-Trichloroethane	ND	0.000227	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1,2-Trichloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Trichloroethene (TCE)	ND	0.000317	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Trichlorofluoromethane	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,3-Trichloropropane	ND	0.000560	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Vinyl chloride	ND	0.000182	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Surr: 1,2-Dichloroethane-d4	99.5	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
Surr: Dibromofluoromethane	102	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
Surr: Toluene-d8	91.3	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.86	3.4		mg/Kg-dr	1	5/6/2015 1:27:20 AM	R25982
Surr: BFB	106	0	67.4-150		%REC	1	5/6/2015 1:27:20 AM	R25982

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

Qualifiers:

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

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505004-001C SWMU 10-4 0-2 FT

Project # :

Collected By :
Collection Date : 04/29/15 15:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	150		mV	2580 B-2011	05/07/15	1
pH	8.3	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-01 (PH) - 8.3 at 20.2C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505004-002C SWMU 10-4 2-4 FT

Project # :

Collected By :
Collection Date : 04/29/15 15:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	70.		mV	2580 B-2011	05/10/15	1
pH	8.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-02 (PH) - 8.4 at 21.0C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505004-003C SWMU 10-4 6-8 FT

Project # :

Collected By :
Collection Date : 04/29/15 15:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	90.		mV	2580 B-2011	05/10/15	1
pH	8.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-03 (PH) - 8.4 at 20.7C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-04

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505004-004C SWMU 10-4 18-20 FT

Project # :

Collected By :
Collection Date : 04/29/15 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/13/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	80.		mV	2580 B-2011	05/10/15	1
pH	9.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-04 (PH) - 9.4 at 20.4C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-05

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505004-005C SWMU 10 DUP01

Project # :

Collected By :
Collection Date : 04/29/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	90.		mV	2580 B-2011	05/10/15	1
pH	8.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-05 (PH) - 8.4 at 20.9C

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762970

May 13, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg			WG786845	05/07/15 05:34
Cyanide	< .25	mg/kg			WG787733	05/12/15 10:23
Cyanide	< .25	mg/kg			WG788554	05/13/15 13:12

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L762970-04	WG786845
pH	su	7.80	7.80	0.385	1	L762507-04	WG787133
pH	su	8.00	8.10	1.12*	1	L763345-03	WG787133
ORP	mV	100.	100.	0.0	20	L762539-05	WG787164
ORP	mV	150.	150.	0.0	20	L762970-01	WG787164
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733
Cyanide	mg/kg	0.320	0.320	0.0	20	L764359-01	WG788554

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chromium, Hexavalent	mg/kg	59.8	65.2	109.	80-120	WG786845
pH	su	7.84	7.82	99.7	98.3-101.7	WG787133
ORP	mV	100	105.	105.	90-110	WG787164
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733
Cyanide	mg/kg	101	112.	111.	50-150	WG788554

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chromium, Hexavalent	mg/kg	65.8	65.2	110.	80-120	0.916	20	WG786845
pH	su	7.81	7.82	100.	98.3-101.7	0.128	20	WG787133

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

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Quality Assurance Report
Level II

L762970

May 13, 2015

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
ORP	mV	105.	105.	105.	90-110	0.0	20	WG787164
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733
Cyanide	mg/kg	122.	112.	121.	50-150	8.55	20	WG788554

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.8	0.0	20	100.	75-125	L762970-04	WG786845
Cyanide	mg/kg	3.18	0.0	3.33	95.0	80-120	L762970-04	WG788554

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.8	20.8	104.	75-125	0.0	20	L762970-04	WG786845
Cyanide	mg/kg	3.50	3.18	105.	80-120	9.58	20	L762970-04	WG788554

Batch number /Run number / Sample number cross reference

WG786845: R3035419: L762970-01 02 03 04 05
WG787133: R3035650: L762970-01 02 03 04 05
WG787164: R3035850: L762970-01
WG787860: R3036066: L762970-02 03 04 05
WG787733: R3036388: L762970-01 02 03 05
WG788554: R3036700: L762970-04

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19040**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.4	57.9	140			

Sample ID **LCS-19040**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769702** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

nt: Western Refining Company

Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0091	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.054	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.038	0.50								J
[illegible] disulfide	ND	0.50								
[illegible]on tetrachloride	ND	0.050								
Chlorobenzene	0.0048	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
[illegible] Trichlorobenzene	ND	0.10								
1,[illegible]-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	97.5	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Chlorobenzene	1.0	0.050	1.000	0	99.7	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-19008	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles
Client ID:	LCSS	Batch ID:	19008	RunNo:	25941
Prep Date:	5/1/2015	Analysis Date:	5/4/2015	SeqNo:	768950
Units:	mg/Kg				

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	123	60.6	134			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.3	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles
Client ID:	PBS	Batch ID:	R25982	RunNo:	25982
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770974
Units:	%REC				

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles
Client ID:	LCSS	Batch ID:	R25982	RunNo:	25982
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770975
Units:	%REC				

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

C[illegible]: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19032**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771128** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
F[illegible]zene	ND	0.00200								
X[illegible], Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**		TestCode: **Method 8260B/5035LOW: VOLATILES**		
Client ID: **PBS**	Batch ID: **19032**		RunNo: **26013**		
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**		SeqNo: **771129**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
[illegible]hlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Sample ID **lcs-19107**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771797** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0107	0.00200	0.01000	0	107	70	130			
Toluene	0.00998	0.00200	0.01000	0	99.8	70	130			
Chlorobenzene	0.00897	0.00200	0.01000	0	89.7	70	130			
1,1-Dichloroethene	0.0114	0.00200	0.01000	0	114	70	130			
Trichloroethene (TCE)	0.0102	0.00200	0.01000	0	102	61.6	131			
[illegible]: 1,2-Dichloroethane-d4	0.0253		0.02500		101	70	130			
[illegible]: 4-Bromofluorobenzene	0.0237		0.02500		94.8	70	130			
Surr: Dibromofluoromethane	0.0251		0.02500		100	70	130			
Surr: Toluene-d8	0.0253		0.02500		101	70	130			

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**	
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**	
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000810	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
[illegible]omethane	ND	0.00200								
1,[illegible]ichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**mb-19107**	SampType:	**MBLK**		TestCode:	**Method 8260B/5035LOW: VOLATILES**					
Client ID:	**PBS**	Batch ID:	**19107**		RunNo:	**26028**					
Prep Date:	**5/7/2015**	Analysis Date:	**5/7/2015**		SeqNo:	**771798**	Units:	**mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane		ND	0.00200								
1,1,2,2-Tetrachloroethane		ND	0.00200								
Tetrachloroethene (PCE)		ND	0.00200								
trans-1,2-DCE		ND	0.00200								
trans-1,3-Dichloropropene		ND	0.00200								
1,2,3-Trichlorobenzene		ND	0.00200								
1,2,4-Trichlorobenzene		ND	0.00200								
1,1,1-Trichloroethane		ND	0.00200								
1,1,2-Trichloroethane		ND	0.00200								
Trichloroethene (TCE)		ND	0.00200								
Trichlorofluoromethane		ND	0.00200								
1,2,3-Trichloropropane		ND	0.00200								
Vinyl chloride		ND	0.00200								
Surr: 1,2-Dichloroethane-d4		0.0256		0.02500		102	70	130			
Surr: 4-Bromofluorobenzene		0.0245		0.02500		97.9	70	130			
Surr: Dibromofluoromethane		0.0258		0.02500		103	70	130			
Surr: Toluene-d8		0.0232		0.02500		92.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBS**	Batch ID: **19026**		RunNo: **26053**		
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**		SeqNo: **772520**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
[illegible]enzyl phthalate	ND	0.20								
[illegible]azole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**	
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19026**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **LCSS**	Batch ID: **19026**	RunNo: **26053**	
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772521**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.20	1.670	0	88.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.8	52.3	122			
2-Chlorophenol	2.6	0.20	3.330	0	77.2	49.9	115			
1,4-Dichlorobenzene	1.4	0.20	1.670	0	84.4	43.7	107			
2,4-Dinitrotoluene	1.3	0.50	1.670	0	77.6	36	106			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.3	39.5	110			
4-Nitrophenol	3.0	0.25	3.330	0	90.2	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	73.7	23.7	111			
Phenol	2.9	0.20	3.330	0	86.4	52.7	119			
Pyrene	1.3	0.20	1.670	0	76.9	50.4	116			
1,2,4-Trichlorobenzene	1.6	0.20	1.670	0	98.3	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19078	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury
Client ID:	PBS	Batch ID:	19078	RunNo:	26010
Prep Date:	5/6/2015	Analysis Date:	5/6/2015	SeqNo:	771069
				Units:	mg/Kg

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

Sample ID	LCS-19078	SampType:	LCS	TestCode:	EPA Method 7471: Mercury
Client ID:	LCSS	Batch ID:	19078	RunNo:	26010
Prep Date:	5/6/2015	Analysis Date:	5/6/2015	SeqNo:	771070
				Units:	mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Sample ID	1505004-004BMS	SampType:	MS	TestCode:	EPA Method 7471: Mercury
Client ID:	SWMU 10-4 (18-20')	Batch ID:	19078	RunNo:	26010
Prep Date:	5/6/2015	Analysis Date:	5/6/2015	SeqNo:	771089
				Units:	mg/Kg-dry

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.19	0.035	0.1792	0.003959	104	75	125			

Sample ID	1505004-004BMSD	SampType:	MSD	TestCode:	EPA Method 7471: Mercury
Client ID:	SWMU 10-4 (18-20')	Batch ID:	19078	RunNo:	26010
Prep Date:	5/6/2015	Analysis Date:	5/6/2015	SeqNo:	771090
				Units:	mg/Kg-dry

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.20	0.036	0.1808	0.003959	107	75	125	3.16	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-19081	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals
Client ID:	LCSS	Batch ID:	19081	RunNo:	26050
Prep Date:	5/6/2015	Analysis Date:	5/7/2015	SeqNo:	772230 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	99.7	80	120			
Arsenic	25	2.5	25.00	0	99.5	80	120			
Barium	24	0.10	25.00	0	97.4	80	120			
Beryllium	26	0.15	25.00	0	105	80	120			
Cadmium	25	0.10	25.00	0	98.6	80	120			
Chromium	25	0.30	25.00	0	99.6	80	120			
Cobalt	24	0.30	25.00	0	97.1	80	120			
Iron	26	2.5	25.00	0	104	80	120			B
Lead	25	0.25	25.00	0	99.3	80	120			
Manganese	25	0.10	25.00	0	98.4	80	120			
Nickel	24	0.50	25.00	0	96.7	80	120			
Selenium	25	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	98.1	80	120			

Sample ID	MB-19081	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals
Client ID:	PBS	Batch ID:	19081	RunNo:	26050
Prep Date:	5/6/2015	Analysis Date:	5/7/2015	SeqNo:	772232 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	3.8	2.5								
Lead	0.14	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505004**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R25941**	RunNo: **25941**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **770909** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R25941**	RunNo: **25941**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **770910** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	79.9	135			
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771006** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.7	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771007** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505004 RcptNo: 1

Received by/date: 04/30/15

Logged By: Lindsay Mangin 4/30/2015 3:50:00 PM

Completed By: Lindsay Mangin 5/1/2015 6:39:41 AM

Reviewed By: 05/01/15

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

Person Notified: _____ Date _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504004	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) GRO/DRO & MRO	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4.29.15	1530	SOIL	SWMU 10-4 (0-2')	JARS-2	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MeOH	-001										✓					
				VIALS-2	SOBI	-001										✓					
	1540	SOIL	SWMU 10-4 (2-4')	JARS-2	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MeOH	-002										✓					
				VIALS-2	SOBI	-002										✓					
	1550	SOIL	SWMU 10-4 (6-8')	JARS-2	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MeOH	-003										✓					
				VIALS-2	SOBI	-003										✓					
	1600	SOIL	SWMU 10-4 (18-20')	JARS-2	NEAT	-004			✓							✓	✓	✓			
				VIALS-2	MeOH	-004										✓					
				VIALS-2	SOBI	-004										✓					

Date	Time	Relinquished by:	Received by:	Date	Time
4.30.15	0800			4-30-15	1300
4/30/15	1550			04/30/15	1550

Remarks:

Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC. GALLUP REFINERY

Mailing Address: 92 GIANT CROSSING RD GALLUP, NM 87301

Phone #: 505-722-0231

email or Fax#: CHERYL.JOHNSON@WNR.COM

QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)

Accreditation: ☐ NELAP ☐ Other _____

☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush _____

Project Name: SWMU 10

Project #:

Project Manager: CHERYL JOHNSON

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505001	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1) GRO/DRO AMRO	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
.29.15	—	SOIL	SWMU 10 DUP01	JARS-2	NEAT	-005			✓							✓	✓	✓			
↓	↓	↓	↓	VIALS-2	MeOH	-005										✓					
				VIALS-2	SOBI	-005										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
1.30.15	0800	[signature]	[signature]	4/30/15	1500
Date:	Time:	Relinquished by:	Received by:	Date	Time
4/30/15	1550	[signature]	[signature]	04/30/15	1550

Remarks:

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

October 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505005

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 12, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505005-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-3-GW
Collection Date: 4/29/2015 6:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 7:07:28 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 7:07:28 PM	18985
Surr: DNOP	110	0	76.5-150		%REC	1	5/1/2015 7:07:28 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.033	0.012	0.050	J	mg/L	1	5/4/2015 9:23:36 PM	R25939
Surr: BFB	168	0	80-120	S	%REC	1	5/4/2015 9:23:36 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.29	1.0		mg/L	10	5/6/2015 8:26:50 PM	R26026
Chloride	7100	67	250		mg/L	500	5/6/2015 8:39:15 PM	R26026
Sulfate	1100	57	250		mg/L	500	5/6/2015 8:39:15 PM	R26026
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.23	0.00095	0.0020		mg/L	1	5/6/2015 6:57:44 PM	R26030
Beryllium	0.00040	0.00031	0.0020	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:57:44 PM	R26030
Chromium	0.0056	0.0018	0.0060	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Cobalt	0.0081	0.0013	0.0060		mg/L	1	5/6/2015 6:57:44 PM	R26030
[illegible]	0.068	0.0073	0.020		mg/L	1	5/6/2015 6:57:44 PM	R26030
Manganese	0.45	0.00027	0.0020	*	mg/L	1	5/6/2015 6:57:44 PM	R26030
Nickel	0.0053	0.0021	0.010	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:57:44 PM	R26030
Vanadium	0.0048	0.0015	0.050	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Zinc	0.033	0.0028	0.010		mg/L	1	5/6/2015 6:57:44 PM	R26030
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.28	0.00095	0.0020		mg/L	1	5/5/2015 5:27:16 PM	19025
Beryllium	0.00091	0.00031	0.0020	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Cadmium	ND	0.00097	0.0020		mg/L	1	5/5/2015 5:27:16 PM	19025
Chromium	ND	0.0022	0.0060		mg/L	1	5/5/2015 5:27:16 PM	19025
Cobalt	0.0059	0.0013	0.0060	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Iron	2.6	0.036	0.10	*	mg/L	5	5/6/2015 5:05:18 PM	19025
Manganese	0.52	0.0015	0.0020	*	mg/L	1	5/5/2015 5:27:16 PM	19025
Nickel	0.0067	0.0023	0.010	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Silver	ND	0.0021	0.0050		mg/L	1	5/5/2015 5:27:16 PM	19025
Vanadium	0.010	0.0015	0.050	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Zinc	0.023	0.0036	0.010		mg/L	1	5/6/2015 4:59:28 PM	19025
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00074	0.00071	0.0050	J	mg/L	5	5/11/2015 2:39:36 PM	R26119
Arsenic	0.011	0.0032	0.050	J*	mg/L	50	5/12/2015 4:59:58 PM	R26138

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505005-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-3-GW
Collection Date: 4/29/2015 6:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	ND	0.00013	0.0050		mg/L	5	5/11/2015 2:39:36 PM	R26119
Selenium	0.041	0.0097	0.050	J	mg/L	50	5/12/2015 4:59:58 PM	R26138
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	0.0013	0.0011	0.0050	J	mg/L	5	5/8/2015 2:04:48 PM	19025
Arsenic	ND	0.022	0.050		mg/L	50	5/13/2015 5:29:34 PM	19025
Lead	0.0024	0.00034	0.0050	J	mg/L	5	5/8/2015 2:04:48 PM	19025
Selenium	0.036	0.0061	0.050	J	mg/L	50	5/13/2015 5:29:34 PM	19025
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:23:50 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505005-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-3-GW
Collection Date: 4/29/2015 6:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachloroethane	ND	1.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 9:59:02 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505005-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-3-GW
Collection Date: 4/29/2015 6:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Surr: 2-Fluorophenol	30.7	0	14.9-111		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: Phenol-d5	31.8	0	11.3-108		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: 2,4,6-Tribromophenol	29.8	0	15.7-154		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: Nitrobenzene-d5	84.1	0	47.8-106		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: 2-Fluorobiphenyl	74.7	0	21.3-123		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: 4-Terphenyl-d14	58.1	0	14.3-135		%REC	1	5/5/2015 9:59:02 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	2.9	0.065	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Methyl tert-butyl ether (MTBE)	5.5	0.17	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Dichloroethane (EDC)	0.48	0.18	1.0	J	µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Butanone	1.4	0.36	10	J	µg/L	1	5/6/2015 3:02:32 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505005-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-3-GW
Collection Date: 4/29/2015 6:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
·hylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
·utylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
n-Propylbenzene	0.31	0.16	1.0	J	µg/L	1	5/6/2015 3:02:32 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 3:02:32 PM	R26017
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505005-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-3-GW
Collection Date: 4/29/2015 6:00:00 PM
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	94.6	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017
Surr: Toluene-d8	98.0	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505005-002
Matrix: TRIP BLANK
Client Sample ID: Trip Blank
Collection Date:
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
·bon disulfide	ND	0.67	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
..rbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505005-002
Matrix: TRIP BLANK
Client Sample ID: Trip Blank
Collection Date:
Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 3:30:05 PM	R26017
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017
Surr: 4-Bromofluorobenzene	96.3	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017
Surr: Dibromofluoromethane	94.4	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017
Surr: Toluene-d8	95.3	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017

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

Qualifiers:

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

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762968-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505005-001H SWMU 10-3-GW

Project # :

Collected By :
Collection Date : 04/29/15 18:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.14	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 10:42 Printed: 05/12/15 10:43

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762968-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505005-001I SWMU 10-3-GW

Project # :

Collected By :
Collection Date : 04/29/15 18:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 10:42 Printed: 05/12/15 10:43

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Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762968

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
anide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762968-01
WG788013: R3036316: L762968-02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19025** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **19025** RunNo: **25975**
Prep Date: **5/4/2015** Analysis Date: **5/5/2015** SeqNo: **769760** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Sample ID **LCS-19025** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **19025** RunNo: **25975**
Prep Date: **5/4/2015** Analysis Date: **5/5/2015** SeqNo: **769761** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.5	85	115			
[illegible]ium	0.50	0.0020	0.5000	0	99.3	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.0	85	115			
Iron	0.48	0.020	0.5000	0	95.9	85	115			
Manganese	0.47	0.0020	0.5000	0	93.6	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			

Sample ID **MB-19025** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **19025** RunNo: **25986**
Prep Date: **5/4/2015** Analysis Date: **5/5/2015** SeqNo: **770113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.0068	0.010								J

Sample ID **LCS-19025** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **19025** RunNo: **25986**
Prep Date: **5/4/2015** Analysis Date: **5/5/2015** SeqNo: **770114** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	1505005-001GMS	SampType:	MS	TestCode:	EPA Method 200.7: Metals
Client ID:	SWMU 10-3-GW	Batch ID:	19025	RunNo:	25975
Prep Date:	5/4/2015	Analysis Date:	5/5/2015	SeqNo:	770329
				Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.68	0.0020	0.5000	0.2804	80.2	70	130			
Beryllium	0.45	0.0020	0.5000	0.0009100	89.2	70	130			
Cadmium	0.49	0.0020	0.5000	0	97.2	70	130			
Chromium	0.44	0.0060	0.5000	0	87.4	70	130			
Cobalt	0.43	0.0060	0.5000	0.005930	85.0	70	130			
Manganese	0.90	0.0020	0.5000	0.5168	75.8	70	130			
Nickel	0.42	0.010	0.5000	0.006710	83.3	70	130			
Silver	0.10	0.0050	0.1000	0	104	70	130			
Vanadium	0.47	0.050	0.5000	0.01041	91.3	70	130			

Sample ID	1505005-001GMSD	SampType:	MSD	TestCode:	EPA Method 200.7: Metals
Client ID:	SWMU 10-3-GW	Batch ID:	19025	RunNo:	25975
Prep Date:	5/4/2015	Analysis Date:	5/5/2015	SeqNo:	770330
				Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.70	0.0020	0.5000	0.2804	83.2	70	130	2.20	20	
Beryllium	0.46	0.0020	0.5000	0.0009100	91.0	70	130	1.98	20	
Cadmium	0.49	0.0020	0.5000	0	98.8	70	130	1.70	20	
Chromium	0.44	0.0060	0.5000	0	89.0	70	130	1.75	20	
Cobalt	0.44	0.0060	0.5000	0.005930	86.6	70	130	1.86	20	
Manganese	0.92	0.0020	0.5000	0.5168	80.8	70	130	2.78	20	
Nickel	0.43	0.010	0.5000	0.006710	84.7	70	130	1.60	20	
Silver	0.11	0.0050	0.1000	0	106	70	130	1.69	20	
Vanadium	0.48	0.050	0.5000	0.01041	92.9	70	130	1.79	20	

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals
Client ID:	PBW	Batch ID:	R26030	RunNo:	26030
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771646
				Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	0.00038	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **R26030** RunNo: **26030**
Prep Date: Analysis Date: **5/6/2015** SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **R26030** RunNo: **26030**
Prep Date: Analysis Date: **5/6/2015** SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Z	0.46	0.010	0.5000	0	92.0	85	115			

Sample ID **1505005-001GMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **SWMU 10-3-GW** Batch ID: **19025** RunNo: **26030**
Prep Date: **5/4/2015** Analysis Date: **5/6/2015** SeqNo: **771691** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.41	0.010	0.5000	0.02308	77.0	70	130			

Sample ID **1505005-001GMSD** SampType: **MSD** TestCode: **EPA Method 200.7: Metals**
Client ID: **SWMU 10-3-GW** Batch ID: **19025** RunNo: **26030**
Prep Date: **5/4/2015** Analysis Date: **5/6/2015** SeqNo: **771692** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.42	0.010	0.5000	0.02308	79.1	70	130	2.63	20	

Sample ID **1505005-001GMS** SampType: **MS** TestCode: **EPA Method 200.7: Metals**
Client ID: **SWMU 10-3-GW** Batch ID: **19025** RunNo: **26030**
Prep Date: **5/4/2015** Analysis Date: **5/6/2015** SeqNo: **771694** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	3.1	0.10	0.5000	2.596	105	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**1505005-001GMSD**	SampType: **MSD**		TestCode: **EPA Method 200.7: Metals**	
Client ID:	**SWMU 10-3-GW**	Batch ID: **19025**		RunNo: **26030**	
Prep Date:	**5/4/2015**	Analysis Date: **5/6/2015**		SeqNo: **771695**	Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	3.1	0.10	0.5000	2.596	96.7	70	130	1.40	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26030** RunNo: **26030**
Prep Date: Analysis Date: **5/6/2015** SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26030** RunNo: **26030**
Prep Date: Analysis Date: **5/6/2015** SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible]	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19025** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **19025** RunNo: **25987**
Prep Date: **5/4/2015** Analysis Date: **5/5/2015** SeqNo: **770247** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								

Sample ID **MB-19025** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **19025** RunNo: **25987**
Prep Date: **5/4/2015** Analysis Date: **5/5/2015** SeqNo: **770248** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774818** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
L	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774819** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774821** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774822** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**		
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**		
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774822**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**		
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**		
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775338**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**		
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**		
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775342**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Metals**		
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**		
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775769**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Metals**		
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**		
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775770**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
[illegible]	ND	0.00050								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26138** RunNo: **26138**
Prep Date: Analysis Date: **5/12/2015** SeqNo: **775346** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26138** RunNo: **26138**
Prep Date: Analysis Date: **5/12/2015** SeqNo: **775348** Units: **mg/L**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775348** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775777** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26138**	RunNo: **26138**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775778** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**MB-19047**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19047**	RunNo:	**25969**
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769643**
				Units:	**mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19047**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19047**	RunNo:	**25969**
Prep Date:	**5/5/2015**	Analysis Date:	**5/5/2015**	SeqNo:	**769644**
				Units:	**mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26026**	RunNo: **26026**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771570** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26026**	RunNo: **26026**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771571** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	106	90	110			
Chloride	4.9	0.50	5.000	0	97.9	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-18985**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767854** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID **LCS-18985**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **18985**	RunNo: **25902**
Prep Date: **4/30/2015**	Analysis Date: **5/1/2015**	SeqNo: **767970** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768862** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**		SampType: **MBLK**			TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **PBW**		Batch ID: **R26017**			RunNo: **26017**						
Prep Date:		Analysis Date: **5/6/2015**			SeqNo: **771281**			Units: **µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	3.0									
2-Butanone	ND	10									
(ı disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	3.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
1,2-Dichlorobenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
1,1-Dichloroethane	ND	1.0									
1,1-Dichloroethene	ND	1.0									
1,2-Dichloropropane	ND	1.0									
1,3-Dichloropropane	ND	1.0									
2,2-Dichloropropane	ND	2.0									

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
richlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**		TestCode: **EPA Method 8260B: VOLATILES**		
Client ID: **LCSW**	Batch ID: **R26017**		RunNo: **26017**		
Prep Date:	Analysis Date: **5/6/2015**		SeqNo: **771283**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**	
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-18996**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770336** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
[illegible]alene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-18996**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770337** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID **lcsd-18996**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **18996**	RunNo: **25988**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **770338** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505005**

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcsd-18996**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **LCSS02**	Batch ID: **18996**		RunNo: **25988**		
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**		SeqNo: **770338**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505005 RcptNo: 1

Received by/date: 04/30/15

Logged By: Lindsay Mangin 4/30/2015 3:50:00 PM

Completed By: Lindsay Mangin 5/1/2015 6:42:31 AM

Reviewed By: CS 05/01/15

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
    # of preserved bottles checked for pH: 2 1 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted? No
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐ Checked by:
    (If no, notify customer for authorization.)

Special Handling (if applicable)

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

Person Notified: _____ Date _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1504005	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) MRO	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	8310 (PNA or PAH)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS-TOTAL & DISSOLVED	GEN CHEM	CRG		Air Bubbles (Y or N)
4.29.15	1800	WATER	SWMU 10-3-GW	40 ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT	-001											✓		✓			
				250 ML AMBER-1	NEAT	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500ML PLASTIC-1	NaOH	-001							✓									
				50 ML PLASTIC-1	$N_{H4}2SO_4$	-001														✓		
4.29.15	—	WATER	TRIP BLANK	40ML VOA-2	HCL	-002										✓						

Date:	Time:	Relinquished by:	Received by:	Date	Time
4.30.15	0800			4.30.15	1300
Date:	Time:	Relinquished by:	Received by:	Date	Time
4.30.15	1550			04/30/15	1550

Remarks:

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

October 08, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505047

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 16, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505047-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB04
Collection Date: 5/1/2015 11:00:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/4/2015 11:46:11 PM	19038
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/4/2015 11:46:11 PM	19038
Surr: DNOP	99.2	0	76.5-150		%REC	1	5/4/2015 11:46:11 PM	19038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 9:52:53 PM	R25939
Surr: BFB	91.2	0	80-120		%REC	1	5/4/2015 9:52:53 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/4/2015 2:12:38 PM	R25965
Chloride	ND	0.13	0.50		mg/L	1	5/4/2015 2:12:38 PM	R25965
Sulfate	ND	0.11	0.50		mg/L	1	5/4/2015 2:12:38 PM	R25965
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/7/2015 3:46:51 PM	R26052
Beryllium	ND	0.00031	0.0020		mg/L	1	5/7/2015 3:46:51 PM	R26052
Cadmium	ND	0.00097	0.0020		mg/L	1	5/7/2015 3:46:51 PM	R26052
Chromium	ND	0.0018	0.0060		mg/L	1	5/7/2015 3:46:51 PM	R26052
Cobalt	ND	0.0013	0.0060		mg/L	1	5/7/2015 3:46:51 PM	R26052
Iron	0.015	0.0073	0.020	J	mg/L	1	5/7/2015 3:46:51 PM	R26052
Manganese	0.00038	0.00027	0.0020	J	mg/L	1	5/7/2015 3:46:51 PM	R26052
Nickel	ND	0.0021	0.010		mg/L	1	5/7/2015 3:46:51 PM	R26052
Silver	ND	0.0012	0.0050		mg/L	1	5/13/2015 1:29:03 PM	R26155
Vanadium	ND	0.0015	0.050		mg/L	1	5/7/2015 3:46:51 PM	R26052
Zinc	0.038	0.0028	0.010		mg/L	1	5/7/2015 3:46:51 PM	R26052
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Beryllium	ND	0.00031	0.0020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 5:13:02 PM	R26030
Chromium	ND	0.0022	0.0060		mg/L	1	5/5/2015 5:38:53 PM	R25986
Cobalt	ND	0.0013	0.0060		mg/L	1	5/5/2015 5:38:53 PM	R25986
Iron	ND	0.0073	0.020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Manganese	ND	0.0015	0.0020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Nickel	ND	0.0023	0.010		mg/L	1	5/5/2015 5:38:53 PM	R25986
Silver	ND	0.0021	0.0050		mg/L	1	5/6/2015 5:13:02 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/5/2015 5:38:53 PM	R25986
Zinc	ND	0.0036	0.010		mg/L	1	5/5/2015 5:38:53 PM	R25986
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00028	0.00014	0.0010	J	mg/L	1	5/11/2015 2:50:21 PM	R26119
Arsenic	ND	0.000065	0.0010		mg/L	1	5/11/2015 2:50:21 PM	R26119

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505047-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB04
Collection Date: 5/1/2015 11:00:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	ND	0.000026	0.0010		mg/L	1	5/11/2015 2:50:21 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 2:50:21 PM	R26119
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.00022	0.0010		mg/L	1	5/11/2015 1:45:48 PM	R26119
Arsenic	ND	0.00044	0.0010		mg/L	1	5/11/2015 1:45:48 PM	R26119
Lead	ND	0.000069	0.00050		mg/L	1	5/11/2015 1:45:48 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 1:45:48 PM	R26119
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/11/2015 2:09:02 PM	19154
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Acenaphthylene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Aniline	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Anthracene	ND	1.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Azobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
ızo(a)pyrene	ND	2.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzoic acid	ND	1.0	20		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzyl alcohol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Carbazole	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Chloroaniline	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Chlorophenol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Chrysene	ND	2.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505047-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB04
Collection Date: 5/1/2015 11:00:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Dibenzofuran	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Diethyl phthalate	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Fluoranthene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Fluorene	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
[illegible]xachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
[illegible]exachloroethane	ND	1.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Isophorone	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Methylphenol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Naphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Nitroaniline	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
3-Nitroaniline	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Nitroaniline	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Nitrobenzene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Nitrophenol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Nitrophenol	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Pentachlorophenol	ND	1.1	20		µg/L	1	5/8/2015 5:02:20 PM	19045
Phenanthrene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Phenol	ND	1.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Pyrene	ND	2.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505047-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB04
Collection Date: 5/1/2015 11:00:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Surr: 2-Fluorophenol	57.2	0	14.9-111		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: Phenol-d5	52.8	0	11.3-108		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: 2,4,6-Tribromophenol	84.0	0	15.7-154		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: Nitrobenzene-d5	67.4	0	47.8-106		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: 2-Fluorobiphenyl	81.5	0	21.3-123		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: 4-Terphenyl-d14	104	0	14.3-135		%REC	1	5/8/2015 5:02:20 PM	19045
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Toluene	0.11	0.11	1.0	J	µg/L	1	5/6/2015 3:57:40 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Acetone	3.1	0.94	10	J	µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017

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

Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505047-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB04
Collection Date: 5/1/2015 11:00:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 3:57:40 PM	R26017
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017
Surr: 4-Bromofluorobenzene	97.5	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505047-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB04
Collection Date: 5/1/2015 11:00:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	103	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017
Surr: Toluene-d8	101	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017

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

Qualifiers:

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

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Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762964-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505047-001H SWMU 10 EB04

Project # :

Collected By :
Collection Date : 05/01/15 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/11/15	1

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

Reported: 05/12/15 10:42 Printed: 05/12/15 10:43

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762964-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505047-001I SWMU 10 EB04

Project # :

Collected By :
Collection Date : 05/01/15 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	0.00051	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 10:42 Printed: 05/12/15 10:43

ESC
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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762964

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762964-01
WG788013: R3036316: L762964-02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770111** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Cadmium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.8	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Nickel	0.51	0.010	0.5000	0	101	85	115			
Vanadium	0.52	0.050	0.5000	0	103	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772431** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	85	115			
[illegible]ium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.50	0.0060	0.5000	0	99.4	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	99.0	85	115			
Nickel	0.49	0.010	0.5000	0	98.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770117** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.54	0.0020	0.5000	0	108	85	115			
[illegible]nium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	101	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.49	0.0020	0.5000	0	97.5	85	115			
Nickel	0.52	0.010	0.5000	0	104	85	115			
Vanadium	0.52	0.050	0.5000	0	105	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772432** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
[illegible]ium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.3	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.2	85	115			
Zinc	0.49	0.010	0.5000	0	97.3	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26155**	RunNo: **26155**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775993** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26155**	RunNo: **26155**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775994** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.092	0.0050	0.1000	0	92.2	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals					
Client ID:	LCSW	Batch ID:	R26119	RunNo:	26119					
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774818	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals					
Client ID:	LCSW	Batch ID:	R26119	RunNo:	26119					
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774819	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals					
Client ID:	PBW	Batch ID:	R26119	RunNo:	26119					
Date:		Analysis Date:	5/11/2015	SeqNo:	774821	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals					
Client ID:	PBW	Batch ID:	R26119	RunNo:	26119					
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774822	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26119** RunNo: **26119**
Prep Date: Analysis Date: **5/11/2015** SeqNo: **774866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19154	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury						
Client ID:	PBW	Batch ID:	19154	RunNo:	26107						
Prep Date:	5/11/2015	Analysis Date:	5/11/2015	SeqNo:	774364	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.00020								

Sample ID	LCS-19154	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury						
Client ID:	LCSW	Batch ID:	19154	RunNo:	26107						
Prep Date:	5/11/2015	Analysis Date:	5/11/2015	SeqNo:	774365	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0050	0.00020	0.005000	0	99.7	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R25965**	RunNo: **25965**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **769526** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Sulfate	ND	0.500								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R25965**	RunNo: **25965**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **769527** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.526	0.100	0.5000	0	105	90	110			
Chloride	4.88	0.500	5.000	0	97.6	90	110			
Sulfate	9.91	0.500	10.00	0	99.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19038**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19038**	RunNo: **25918**
Prep Date: **5/4/2015**	Analysis Date: **5/4/2015**	SeqNo: **768890** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.92		1.000		92.1	76.5	150			

Sample ID **LCS-19038**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19038**	RunNo: **25918**
Prep Date: **5/4/2015**	Analysis Date: **5/4/2015**	SeqNo: **768891** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.3	1.0	5.000	0	105	60.1	156			
Surr: DNOP	0.49		0.5000		97.5	76.5	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768862** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**		SampType: **MBLK**			TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **PBW**		Batch ID: **R26017**			RunNo: **26017**						
Prep Date:		Analysis Date: **5/6/2015**			SeqNo: **771281**			Units: **µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	ND	1.0									
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	ND	4.0									
2-Methylnaphthalene	ND	4.0									
Acetone	ND	10									
Bromobenzene	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	3.0									
2-Butanone	ND	10									
n disulfide	ND	10									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	3.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
1,2-Dichlorobenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
1,1-Dichloroethane	ND	1.0									
1,1-Dichloroethene	ND	1.0									
1,2-Dichloropropane	ND	1.0									
1,3-Dichloropropane	ND	1.0									
2,2-Dichloropropane	ND	2.0									

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
[illegible]richlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**		TestCode: **EPA Method 8260B: VOLATILES**		
Client ID: **LCSW**	Batch ID: **R26017**		RunNo: **26017**		
Prep Date:	Analysis Date: **5/6/2015**		SeqNo: **771283**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**mb-19045**	SampType:	**MBLK**		TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**PBW**	Batch ID:	**19045**		RunNo:	**26094**					
Prep Date:	**5/5/2015**	Analysis Date:	**5/8/2015**		SeqNo:	**773642**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
[illegible]enzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19045**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBW**	Batch ID: **19045**		RunNo: **26094**		
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**		SeqNo: **773642**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
[illegible]halene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.4	14.9	111			
Surr: Phenol-d5	170		200.0		83.9	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		103	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		85.8	47.8	106			
Surr: 2-Fluorobiphenyl	91		100.0		91.2	21.3	123			
Surr: 4-Terphenyl-d14	78		100.0		78.4	14.3	135			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19045**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773643** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	62	10	100.0	0	62.4	47.8	99.7			
4-Chloro-3-methylphenol	140	10	200.0	0	70.3	58.1	103			
2-Chlorophenol	110	10	200.0	0	55.9	49.5	96.8			
1,4-Dichlorobenzene	57	10	100.0	0	57.1	40.4	89.4			
2,4-Dinitrotoluene	62	10	100.0	0	62.4	38.6	91.3			
N-Nitrosodi-n-propylamine	72	10	100.0	0	72.1	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	78.9	26.4	108			
Pentachlorophenol	130	20	200.0	0	65.5	36.5	86.6			
Phenol	120	10	200.0	0	58.2	29.3	108			
Pyrene	70	10	100.0	0	70.3	45.7	100			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.0	39.3	94.5			
Surr: 2-Fluorophenol	120		200.0		61.3	14.9	111			
Surr: Phenol-d5	130		200.0		65.4	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		79.5	15.7	154			
Surr: Nitrobenzene-d5	64		100.0		63.8	47.8	106			
Surr: 2-Fluorobiphenyl	70		100.0		70.5	21.3	123			
Surr: 4-Terphenyl-d14	66		100.0		66.5	14.3	135			

Sample ID **lcsd-19045**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	64	10	100.0	0	63.9	47.8	99.7	2.47	28.2	
4-Chloro-3-methylphenol	140	10	200.0	0	69.1	58.1	103	1.77	24.4	
2-Chlorophenol	120	10	200.0	0	58.0	49.5	96.8	3.65	28.1	
1,4-Dichlorobenzene	60	10	100.0	0	60.0	40.4	89.4	5.06	31.2	
2,4-Dinitrotoluene	60	10	100.0	0	60.4	38.6	91.3	3.26	44.4	
N-Nitrosodi-n-propylamine	68	10	100.0	0	68.4	53.9	95.6	5.27	24.2	
4-Nitrophenol	150	10	200.0	0	75.0	26.4	108	5.00	36.6	
Pentachlorophenol	150	20	200.0	0	73.3	36.5	86.6	11.3	29.5	
Phenol	120	10	200.0	0	62.1	29.3	108	6.48	30	
Pyrene	78	10	100.0	0	78.0	45.7	100	10.3	31	
1,2,4-Trichlorobenzene	69	10	100.0	0	68.6	39.3	94.5	3.80	24	
Surr: 2-Fluorophenol	130		200.0		63.3	14.9	111	0	0	
Surr: Phenol-d5	140		200.0		67.7	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		89.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	61		100.0		61.2	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		67.1	21.3	123	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505047**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcsd-19045**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **LCSS02**	Batch ID: **19045**		RunNo: **26094**		
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**		SeqNo: **773644**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	74		100.0		74.0	14.3	135	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505047 RcptNo: 1

Received by/date: AT 05/01/15

Logged By: Lindsay Mangin 5/1/2015 1:48:00 PM

Completed By: Lindsay Mangin 5/1/2015 3:04:46 PM

Reviewed By: JA 05/04/15

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)
Adjusted? no
Checked by: CS

Special Handling (if applicable)

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

Person Notified: _____ Date _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks: For 300 analysis, Poured off from a 1L unpreserved amber. CS 05/04/15

18. Cooler Information

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

Chain of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505047	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS-TOTAL & DISSOLVED	GEN CHEM	CR6		Air Bubbles (Y or N)
5.1.15	1100	WATER	SWMU 10 EB04	40 ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT	-001											✓		✓			
				250 ML AMBER-1	NEAT	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	NAOH	-001							✓									
		WATER		50 ML PLASTIC-1	NH_4SO_4	-001														✓		

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.1.15	1118	[signature]	[signature]	5/1/15	11:18
Date:	Time:	Relinquished by:	Received by:	Date	Time
.1.15	13:48	[signature]	[signature]	05/01/15	13:48

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

October 08, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505048

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 16, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505048-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB03
Collection Date: 4/30/2015 12:05:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/5/2015 12:13:09 AM	19038
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/5/2015 12:13:09 AM	19038
Surr: DNOP	96.5	0	76.5-150		%REC	1	5/5/2015 12:13:09 AM	19038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 10:22:08 PM	R25939
Surr: BFB	89.2	0	80-120		%REC	1	5/4/2015 10:22:08 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/4/2015 2:37:28 PM	R25965
Chloride	ND	0.13	0.50		mg/L	1	5/4/2015 2:37:28 PM	R25965
Sulfate	ND	0.11	0.50		mg/L	1	5/4/2015 2:37:28 PM	R25965
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/7/2015 3:48:54 PM	R26052
Beryllium	ND	0.00031	0.0020		mg/L	1	5/7/2015 3:48:54 PM	R26052
Cadmium	ND	0.00097	0.0020		mg/L	1	5/7/2015 3:48:54 PM	R26052
Chromium	ND	0.0018	0.0060		mg/L	1	5/7/2015 3:48:54 PM	R26052
Cobalt	ND	0.0013	0.0060		mg/L	1	5/7/2015 3:48:54 PM	R26052
	0.0094	0.0073	0.020	J	mg/L	1	5/7/2015 3:48:54 PM	R26052
Manganese	0.00044	0.00027	0.0020	J	mg/L	1	5/7/2015 3:48:54 PM	R26052
Nickel	ND	0.0021	0.010		mg/L	1	5/7/2015 3:48:54 PM	R26052
Silver	0.0018	0.0012	0.0050	J	mg/L	1	5/13/2015 1:31:04 PM	R26155
Vanadium	ND	0.0015	0.050		mg/L	1	5/7/2015 3:48:54 PM	R26052
Zinc	0.078	0.0028	0.010		mg/L	1	5/7/2015 3:48:54 PM	R26052
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Beryllium	ND	0.00031	0.0020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 5:15:07 PM	R26030
Chromium	ND	0.0022	0.0060		mg/L	1	5/5/2015 5:40:50 PM	R25986
Cobalt	ND	0.0013	0.0060		mg/L	1	5/5/2015 5:40:50 PM	R25986
Iron	ND	0.0073	0.020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Manganese	ND	0.0015	0.0020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Nickel	ND	0.0023	0.010		mg/L	1	5/5/2015 5:40:50 PM	R25986
Silver	ND	0.0021	0.0050		mg/L	1	5/6/2015 5:15:07 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/5/2015 5:40:50 PM	R25986
Zinc	ND	0.0036	0.010		mg/L	1	5/5/2015 5:40:50 PM	R25986
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00033	0.00014	0.0010	J	mg/L	1	5/11/2015 2:55:43 PM	R26119
Arsenic	ND	0.000065	0.0010		mg/L	1	5/11/2015 2:55:43 PM	R26119

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505048-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB03
Collection Date: 4/30/2015 12:05:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	0.000046	0.000026	0.0010	J	mg/L	1	5/11/2015 2:55:43 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 2:55:43 PM	R26119
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.00022	0.0010		mg/L	1	5/11/2015 1:51:10 PM	R26119
Arsenic	ND	0.00044	0.0010		mg/L	1	5/11/2015 1:51:10 PM	R26119
Lead	ND	0.000069	0.00050		mg/L	1	5/11/2015 1:51:10 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 1:51:10 PM	R26119
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/11/2015 2:10:49 PM	19154
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Acenaphthylene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Aniline	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Anthracene	ND	1.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Azobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
ɪzo(a)pyrene	ND	2.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
ɒenzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzoic acid	ND	1.0	20		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzyl alcohol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Carbazole	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Chloroaniline	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Chlorophenol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Chrysene	ND	2.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Di-n-octyl phthalate	2.3	1.9	10	J	µg/L	1	5/8/2015 5:30:17 PM	19045
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505048-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB03
Collection Date: 4/30/2015 12:05:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Dibenzofuran	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Diethyl phthalate	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Fluoranthene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Fluorene	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachloroethane	ND	1.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Isophorone	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Methylphenol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Naphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Nitroaniline	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
3-Nitroaniline	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Nitroaniline	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Nitrobenzene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Nitrophenol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Nitrophenol	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Pentachlorophenol	ND	1.1	20		µg/L	1	5/8/2015 5:30:17 PM	19045
Phenanthrene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Phenol	ND	1.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Pyrene	ND	2.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045

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

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505048-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB03
Collection Date: 4/30/2015 12:05:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Surr: 2-Fluorophenol	67.4	0	14.9-111		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: Phenol-d5	61.1	0	11.3-108		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: 2,4,6-Tribromophenol	76.7	0	15.7-154		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: Nitrobenzene-d5	83.3	0	47.8-106		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: 2-Fluorobiphenyl	81.0	0	21.3-123		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: 4-Terphenyl-d14	87.8	0	14.3-135		%REC	1	5/8/2015 5:30:17 PM	19045
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Toluene	0.11	0.11	1.0	J	µg/L	1	5/6/2015 4:25:14 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505048-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB03
Collection Date: 4/30/2015 12:05:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 4:25:14 PM	R26017
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017
Surr: 4-Bromofluorobenzene	97.7	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505048-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB03
Collection Date: 4/30/2015 12:05:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	95.1	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017
Surr: Toluene-d8	95.1	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017

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

Qualifiers:

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

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762966-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505048-001H SWMU 10 EB03

Project # :

Collected By :
Collection Date : 04/30/15 12:05

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 08:18 Printed: 05/12/15 08:18

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762966

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762966-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **R25986** RunNo: **25986**
Prep Date: Analysis Date: **5/5/2015** SeqNo: **770111** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **R25986** RunNo: **25986**
Prep Date: Analysis Date: **5/5/2015** SeqNo: **770112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.8	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Nickel	0.51	0.010	0.5000	0	101	85	115			
Vanadium	0.52	0.050	0.5000	0	103	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **R26030** RunNo: **26030**
Prep Date: Analysis Date: **5/6/2015** SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **R26030** RunNo: **26030**
Prep Date: Analysis Date: **5/6/2015** SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772431** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.50	0.0060	0.5000	0	99.4	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	99.0	85	115			
Nickel	0.49	0.010	0.5000	0	98.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R25986**	RunNo: **25986**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770117** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.54	0.0020	0.5000	0	108	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	101	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.49	0.0020	0.5000	0	97.5	85	115			
Nickel	0.52	0.010	0.5000	0	104	85	115			
Vanadium	0.52	0.050	0.5000	0	105	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772432** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.3	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.2	85	115			
Zinc	0.49	0.010	0.5000	0	97.3	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26155**	RunNo: **26155**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775993** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26155**	RunNo: **26155**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775994** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.092	0.0050	0.1000	0	92.2	85	115			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals
Client ID:	LCSW	Batch ID:	R26119	RunNo:	26119
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774818 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals
Client ID:	LCSW	Batch ID:	R26119	RunNo:	26119
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774819 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	R26119	RunNo:	26119
Date:		Analysis Date:	5/11/2015	SeqNo:	774821 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	R26119	RunNo:	26119
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774822 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774864** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Date:	Analysis Date: **5/11/2015**	SeqNo: **774865** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26119**	RunNo: **26119**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774866** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19154**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19154**	RunNo:	**26107**
Prep Date:	**5/11/2015**	Analysis Date:	**5/11/2015**	SeqNo:	**774364**	Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19154**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19154**	RunNo:	**26107**
Prep Date:	**5/11/2015**	Analysis Date:	**5/11/2015**	SeqNo:	**774365**	Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.7	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**		
Client ID: **PBW**	Batch ID: **R25965**	RunNo: **25965**		
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **769526**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Sulfate	ND	0.500								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**		
Client ID: **LCSW**	Batch ID: **R25965**	RunNo: **25965**		
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **769527**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.526	0.100	0.5000	0	105	90	110			
Chloride	4.88	0.500	5.000	0	97.6	90	110			
Sulfate	9.91	0.500	10.00	0	99.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19038**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19038**	RunNo: **25918**
Prep Date: **5/4/2015**	Analysis Date: **5/4/2015**	SeqNo: **768890** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.92		1.000		92.1	76.5	150			

Sample ID **LCS-19038**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19038**	RunNo: **25918**
Prep Date: **5/4/2015**	Analysis Date: **5/4/2015**	SeqNo: **768891** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.3	1.0	5.000	0	105	60.1	156			
Surr: DNOP	0.49		0.5000		97.5	76.5	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768862** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R25939**	RunNo: **25939**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **768863** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

C...nt: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**	
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
( ) disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771281** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26017**	RunNo: **26017**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771283** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**			TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **LCSW**	Batch ID: **R26017**			RunNo: **26017**						
Prep Date:	Analysis Date: **5/6/2015**			SeqNo: **771283**		Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**mb-19045**	SampType:	**MBLK**		TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**PBW**	Batch ID:	**19045**		RunNo:	**26094**					
Prep Date:	**5/5/2015**	Analysis Date:	**5/8/2015**		SeqNo:	**773642**	Units:	**µg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene		ND	10								
Acenaphthylene		ND	10								
Aniline		ND	10								
Anthracene		ND	10								
Azobenzene		ND	10								
Benz(a)anthracene		ND	10								
Benzo(a)pyrene		ND	10								
Benzo(b)fluoranthene		ND	10								
Benzo(g,h,i)perylene		ND	10								
Benzo(k)fluoranthene		ND	10								
Benzoic acid		ND	20								
Benzyl alcohol		ND	10								
Bis(2-chloroethoxy)methane		ND	10								
Bis(2-chloroethyl)ether		ND	10								
Bis(2-chloroisopropyl)ether		ND	10								
Bis(2-ethylhexyl)phthalate		ND	10								
4-Bromophenyl phenyl ether		ND	10								
[illegible]enzyl phthalate		ND	10								
Carbazole		ND	10								
4-Chloro-3-methylphenol		ND	10								
4-Chloroaniline		ND	10								
2-Chloronaphthalene		ND	10								
2-Chlorophenol		ND	10								
4-Chlorophenyl phenyl ether		ND	10								
Chrysene		ND	10								
Di-n-butyl phthalate		ND	10								
Di-n-octyl phthalate		ND	10								
Dibenz(a,h)anthracene		ND	10								
Dibenzofuran		ND	10								
1,2-Dichlorobenzene		ND	10								
1,3-Dichlorobenzene		ND	10								
1,4-Dichlorobenzene		ND	10								
3,3'-Dichlorobenzidine		ND	10								
Diethyl phthalate		ND	10								
Dimethyl phthalate		ND	10								
2,4-Dichlorophenol		ND	20								
2,4-Dimethylphenol		ND	10								
4,6-Dinitro-2-methylphenol		ND	20								
2,4-Dinitrophenol		ND	20								

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19045**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19045**	RunNo: **26094**
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**	SeqNo: **773642** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
[illegible]alene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.4	14.9	111			
Surr: Phenol-d5	170		200.0		83.9	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		103	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		85.8	47.8	106			
Surr: 2-Fluorobiphenyl	91		100.0		91.2	21.3	123			
Surr: 4-Terphenyl-d14	78		100.0		78.4	14.3	135			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19045** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **19045** RunNo: **26094**
Prep Date: **5/5/2015** Analysis Date: **5/8/2015** SeqNo: **773643** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	62	10	100.0	0	62.4	47.8	99.7			
4-Chloro-3-methylphenol	140	10	200.0	0	70.3	58.1	103			
2-Chlorophenol	110	10	200.0	0	55.9	49.5	96.8			
1,4-Dichlorobenzene	57	10	100.0	0	57.1	40.4	89.4			
2,4-Dinitrotoluene	62	10	100.0	0	62.4	38.6	91.3			
N-Nitrosodi-n-propylamine	72	10	100.0	0	72.1	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	78.9	26.4	108			
Pentachlorophenol	130	20	200.0	0	65.5	36.5	86.6			
Phenol	120	10	200.0	0	58.2	29.3	108			
Pyrene	70	10	100.0	0	70.3	45.7	100			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.0	39.3	94.5			
Surr: 2-Fluorophenol	120		200.0		61.3	14.9	111			
Surr: Phenol-d5	130		200.0		65.4	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		79.5	15.7	154			
Surr: Nitrobenzene-d5	64		100.0		63.8	47.8	106			
Surr: 2-Fluorobiphenyl	70		100.0		70.5	21.3	123			
Surr: 4-Terphenyl-d14	66		100.0		66.5	14.3	135			

Sample ID **lcsd-19045** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **19045** RunNo: **26094**
Prep Date: **5/5/2015** Analysis Date: **5/8/2015** SeqNo: **773644** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	64	10	100.0	0	63.9	47.8	99.7	2.47	28.2	
4-Chloro-3-methylphenol	140	10	200.0	0	69.1	58.1	103	1.77	24.4	
2-Chlorophenol	120	10	200.0	0	58.0	49.5	96.8	3.65	28.1	
1,4-Dichlorobenzene	60	10	100.0	0	60.0	40.4	89.4	5.06	31.2	
2,4-Dinitrotoluene	60	10	100.0	0	60.4	38.6	91.3	3.26	44.4	
N-Nitrosodi-n-propylamine	68	10	100.0	0	68.4	53.9	95.6	5.27	24.2	
4-Nitrophenol	150	10	200.0	0	75.0	26.4	108	5.00	36.6	
Pentachlorophenol	150	20	200.0	0	73.3	36.5	86.6	11.3	29.5	
Phenol	120	10	200.0	0	62.1	29.3	108	6.48	30	
Pyrene	78	10	100.0	0	78.0	45.7	100	10.3	31	
1,2,4-Trichlorobenzene	69	10	100.0	0	68.6	39.3	94.5	3.80	24	
Surr: 2-Fluorophenol	130		200.0		63.3	14.9	111	0	0	
Surr: Phenol-d5	140		200.0		67.7	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		89.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	61		100.0		61.2	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		67.1	21.3	123	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505048**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcsd-19045**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **LCSS02**	Batch ID: **19045**		RunNo: **26094**		
Prep Date: **5/5/2015**	Analysis Date: **5/8/2015**		SeqNo: **773644**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	74		100.0		74.0	14.3	135	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505048** RcptNo: **1**

Received by/date: AT 05/01/15

Logged By: **Lindsay Mangin** **5/1/2015 1:50:00 PM**

Completed By: **Lindsay Mangin** **5/2/2015 9:43:07 AM**

Reviewed By: 05/04/15

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)

Adjusted? no

Checked by: CS

Special Handling (if applicable)

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

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks: For 300 analysis, poured off from a 1L unpreserved amber. CS 05/04/15

18. **Cooler Information**

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

Chain of Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 10

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505028	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS, TOTAL & DISSOLVED	GEN CHEM			Air Bubbles (Y or N)
3015	1205	WATER	SWMU 10 EB03	40 ML VOA-6	HCL	-001			✓							✓						
↓	↓	↓	↓	1 LITER AMBER-2	NEAT	-001											✓		✓			
				250 ML AMBER-1	NEAT	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	NaOH	-001							✓									
				~~50 ML PLASTIC-1~~	~~NH_4SO_4~~	—																

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
5-1-15	0730	[signature]	[signature]	5/1/15	11/39	
Date:	Time:	Relinquished by:	Received by:	Date	Time	
1-15	1350	[signature]	[signature]	05/01/15	1550	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

October 08, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505057

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 7 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 16, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Case Narrative

WO#: **1505057**
Date: **10/8/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

C..ENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (2-4')
Collection Date: 4/30/2015 1:50:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	210	5.4	9.7		mg/Kg-dr	1	5/7/2015 6:01:28 PM	19001
Motor Oil Range Organics (MRO)	170	48	48		mg/Kg-dr	1	5/7/2015 6:01:28 PM	19001
Surr: DNOP	112	0	57.9-140		%REC	1	5/7/2015 6:01:28 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.070	0.016	0.18	J	mg/Kg-dr	5	5/29/2015 1:09:09 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Arsenic	1.8	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Barium	220	0.035	0.12		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Beryllium	0.77	0.0086	0.17		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Chromium	17	0.070	0.35		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Cobalt	4.6	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Iron	12000	70	290		mg/Kg-dr	100	5/7/2015 11:25:45 AM	19081
d	4.8	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
...nganese	180	0.068	0.12		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Nickel	7.7	0.15	0.58		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Vanadium	18	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Zinc	24	0.75	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Acenaphthylene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Aniline	ND	0.87	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Anthracene	ND	0.85	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Azobenzene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benz(a)anthracene	ND	0.78	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(a)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(b)fluoranthene	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(g,h,i)perylene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(k)fluoranthene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzoic acid	ND	0.57	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzyl alcohol	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Bis(2-chloroethoxy)methane	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

C. ENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (2-4')
Collection Date: 4/30/2015 1:50:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.99	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Bis(2-chloroisopropyl)ether	ND	0.76	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Bis(2-ethylhexyl)phthalate	1.5	1.1	5.0	J	mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Bromophenyl phenyl ether	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Butyl benzyl phthalate	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Carbazole	ND	0.93	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Chloro-3-methylphenol	ND	0.99	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Chloroaniline	ND	0.92	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Chloronaphthalene	ND	1.1	2.5		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Chlorophenol	ND	0.93	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Chlorophenyl phenyl ether	ND	1.5	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Chrysene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Di-n-butyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Di-n-octyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Dibenz(a,h)anthracene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Dibenzofuran	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,2-Dichlorobenzene	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,3-Dichlorobenzene	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Dichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
3,3'-Dichlorobenzidine	ND	0.77	2.5		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Diethyl phthalate	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Dimethyl phthalate	ND	0.92	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dichlorophenol	ND	1.0	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dimethylphenol	ND	0.78	3.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4,6-Dinitro-2-methylphenol	ND	0.54	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dinitrophenol	ND	0.41	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dinitrotoluene	ND	0.89	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,6-Dinitrotoluene	ND	1.1	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Fluoranthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Fluorene	ND	1.4	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachlorobenzene	ND	0.94	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachlorobutadiene	ND	0.99	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachlorocyclopentadiene	ND	0.69	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachloroethane	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Indeno(1,2,3-cd)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Isophorone	ND	1.1	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1-Methylnaphthalene	ND	0.92	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Methylnaphthalene	ND	0.91	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Methylphenol	ND	1.0	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (2-4')
Collection Date: 4/30/2015 1:50:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
N-Nitrosodi-n-propylamine	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
N-Nitrosodiphenylamine	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Naphthalene	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Nitroaniline	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
3-Nitroaniline	ND	0.96	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Nitroaniline	ND	0.90	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Nitrobenzene	ND	1.0	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Nitrophenol	ND	0.90	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Nitrophenol	ND	0.86	2.5		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Pentachlorophenol	ND	0.62	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Phenanthrene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Phenol	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Pyrene	ND	1.3	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Pyridine	ND	0.84	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,2,4-Trichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4,5-Trichlorophenol	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4,6-Trichlorophenol	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/6/2015 6:43:30 PM	19054
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.000788	0.000395	0.00175	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Toluene	0.000797	0.000182	0.00175	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Ethylbenzene	ND	0.000295	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Xylenes, Total	ND	0.00104	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000735	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,4-Trimethylbenzene	ND	0.000458	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,3,5-Trimethylbenzene	ND	0.000307	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000469	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000209	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Naphthalene	ND	0.000572	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1-Methylnaphthalene	ND	0.000688	0.00350		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Methylnaphthalene	ND	0.000685	0.00350		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Acetone	0.0184	0.00109	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Bromobenzene	ND	0.000487	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (2-4')
Collection Date: 4/30/2015 1:50:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000237	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Bromoform	ND	0.000454	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Bromomethane	ND	0.00104	0.00263		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Butanone	0.00234	0.000561	0.00876	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Carbon tetrachloride	ND	0.000317	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chlorobenzene	ND	0.000178	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chloroethane	ND	0.00175	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chloroform	ND	0.000361	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chloromethane	ND	0.000207	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Chlorotoluene	ND	0.000342	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Carbon disulfide	ND	0.000793	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
4-Chlorotoluene	ND	0.000337	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
cis-1,2-DCE	ND	0.000463	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
cis-1,3-Dichloropropene	ND	0.00175	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000515	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Dibromochloromethane	ND	0.000196	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Dibromomethane	ND	0.000994	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
* 2-Dichlorobenzene	ND	0.000389	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
-Dichlorobenzene	ND	0.000297	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,4-Dichlorobenzene	ND	0.000275	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Dichlorodifluoromethane	ND	0.000715	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1-Dichloroethane	ND	0.000409	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1-Dichloroethene	ND	0.000292	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dichloropropane	ND	0.000374	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,3-Dichloropropane	ND	0.000273	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2,2-Dichloropropane	ND	0.000304	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1-Dichloropropene	ND	0.000321	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Hexachlorobutadiene	ND	0.000353	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Isopropylbenzene	ND	0.000406	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
4-Isopropyltoluene	ND	0.000680	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Methylene chloride	0.000438	0.000433	0.00175	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
n-Butylbenzene	ND	0.000719	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Hexanone	ND	0.000364	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
n-Propylbenzene	ND	0.000328	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
sec-Butylbenzene	ND	0.000442	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Styrene	ND	0.000290	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
4-Methyl-2-pentanone	ND	0.000740	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
tert-Butylbenzene	ND	0.000269	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000285	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (2-4')
Collection Date: 4/30/2015 1:50:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000385	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Tetrachloroethene (PCE)	ND	0.000347	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
trans-1,2-DCE	ND	0.000283	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
trans-1,3-Dichloropropene	ND	0.000229	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,3-Trichlorobenzene	ND	0.000641	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,4-Trichlorobenzene	ND	0.000656	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1,1-Trichloroethane	ND	0.000249	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1,2-Trichloroethane	ND	0.00175	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Trichloroethene (TCE)	ND	0.000348	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Trichlorofluoromethane	ND	0.000354	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,3-Trichloropropane	ND	0.000615	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Vinyl chloride	ND	0.000200	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
Surr: 4-Bromofluorobenzene	105	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
Surr: Toluene-d8	86.8	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.83	3.3		mg/Kg-dr	1	5/6/2015 1:56:09 AM	R25982
Surr: BFB	109	0	67.4-150		%REC	1	5/6/2015 1:56:09 AM	R25982

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

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

C..ENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (4-6')
Collection Date: 4/30/2015 2:00:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	300	6.7	12		mg/Kg-dr	1	5/5/2015 8:10:49 PM	19001
Motor Oil Range Organics (MRO)	120	61	61		mg/Kg-dr	1	5/5/2015 8:10:49 PM	19001
Surr: DNOP	107	0	57.9-140		%REC	1	5/5/2015 8:10:49 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	17	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0086	0.0033	0.037	J	mg/Kg-dr	1	5/14/2015 3:29:22 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Arsenic	1.1	0.70	5.9	J	mg/Kg-dr	2	5/7/2015 2:25:59 PM	19081
Barium	250	0.035	0.12		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Beryllium	0.94	0.0088	0.18		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Chromium	14	0.071	0.36		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Cobalt	5.3	0.045	0.36		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Iron	16000	72	300		mg/Kg-dr	100	5/7/2015 11:27:07 AM	19081
d	3.2	0.13	0.30		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
...nganese	290	0.070	0.12		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Nickel	10	0.15	0.59		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Silver	ND	0.035	0.30		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Vanadium	19	0.040	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Zinc	32	0.76	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Acenaphthylene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Aniline	ND	0.86	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Anthracene	ND	0.84	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Azobenzene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benz(a)anthracene	ND	0.78	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(a)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(b)fluoranthene	ND	0.94	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(g,h,i)perylene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(k)fluoranthene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzoic acid	ND	0.57	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzyl alcohol	ND	0.88	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Bis(2-chloroethoxy)methane	ND	0.95	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

C. ENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (4-6')
Collection Date: 4/30/2015 2:00:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Bis(2-chloroethyl)ether	ND	0.98	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Bis(2-chloroisopropyl)ether	ND	0.76	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Bis(2-ethylhexyl)phthalate	ND	1.1	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Bromophenyl phenyl ether	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Butyl benzyl phthalate	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Carbazole	ND	0.93	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Chloro-3-methylphenol	ND	0.99	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Chloroaniline	ND	0.92	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Chloronaphthalene	ND	1.1	2.5		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Chlorophenol	ND	0.93	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Chlorophenyl phenyl ether	ND	1.5	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Chrysene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Di-n-butyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Di-n-octyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Dibenz(a,h)anthracene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Dibenzofuran	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,2-Dichlorobenzene	ND	0.95	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,3-Dichlorobenzene	ND	0.88	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Dichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
3,3'-Dichlorobenzidine	ND	0.76	2.5		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Diethyl phthalate	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Dimethyl phthalate	ND	0.91	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dichlorophenol	ND	0.99	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dimethylphenol	ND	0.78	3.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4,6-Dinitro-2-methylphenol	ND	0.54	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dinitrophenol	ND	0.41	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dinitrotoluene	ND	0.89	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,6-Dinitrotoluene	ND	1.1	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Fluoranthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Fluorene	ND	1.4	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachlorobenzene	ND	0.94	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachlorobutadiene	ND	0.98	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachlorocyclopentadiene	ND	0.69	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachloroethane	ND	0.88	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Indeno(1,2,3-cd)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Isophorone	ND	1.1	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1-Methylnaphthalene	1.1	0.92	2.0	J	mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Methylnaphthalene	1.0	0.91	2.0	J	mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Methylphenol	ND	1.0	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (4-6')
Collection Date: 4/30/2015 2:00:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
3+4-Methylphenol	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
N-Nitrosodi-n-propylamine	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
N-Nitrosodiphenylamine	ND	0.89	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Naphthalene	ND	0.95	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Nitroaniline	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
3-Nitroaniline	ND	0.96	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Nitroaniline	ND	0.89	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Nitrobenzene	ND	1.0	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Nitrophenol	ND	0.89	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Nitrophenol	ND	0.86	2.5		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Pentachlorophenol	ND	0.62	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Phenanthrene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Phenol	ND	0.89	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Pyrene	ND	1.3	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Pyridine	ND	0.83	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,2,4-Trichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4,5-Trichlorophenol	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4,6-Trichlorophenol	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/6/2015 7:11:27 PM	19054
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.021	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Toluene	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Ethylbenzene	0.040	0.013	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.020	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,4-Trimethylbenzene	0.42	0.0072	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,3,5-Trimethylbenzene	0.12	0.0095	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.058	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Naphthalene	0.32	0.034	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1-Methylnaphthalene	1.1	0.087	0.58		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Methylnaphthalene	1.5	0.095	0.58		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Acetone	ND	0.11	2.2		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Bromobenzene	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Bromodichloromethane	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

C. ENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (4-6')
Collection Date: 4/30/2015 2:00:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Bromomethane	ND	0.028	0.43		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Butanone	ND	0.093	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Carbon disulfide	ND	0.10	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Carbon tetrachloride	ND	0.014	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chlorobenzene	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chloroethane	ND	0.11	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chloroform	ND	0.015	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chloromethane	ND	0.017	0.43		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Chlorotoluene	ND	0.016	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
4-Chlorotoluene	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
cis-1,2-DCE	ND	0.018	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
cis-1,3-Dichloropropene	ND	0.010	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.025	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Dibromochloromethane	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Dibromomethane	ND	0.015	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dichlorobenzene	ND	0.0087	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,3-Dichlorobenzene	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Dichlorobenzene	ND	0.018	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Dichlorodifluoromethane	ND	0.036	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1-Dichloroethane	ND	0.058	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1-Dichloroethene	ND	0.010	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dichloropropane	ND	0.0081	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,3-Dichloropropane	ND	0.020	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2,2-Dichloropropane	ND	0.021	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1-Dichloropropene	ND	0.022	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Hexachlorobutadiene	ND	0.020	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Hexanone	ND	0.036	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Isopropylbenzene	0.016	0.012	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
4-Isopropyltoluene	ND	0.010	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
4-Methyl-2-pentanone	ND	0.025	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Methylene chloride	ND	0.058	0.43		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
n-Butylbenzene	0.065	0.012	0.43	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
n-Propylbenzene	0.052	0.011	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
sec-Butylbenzene	0.021	0.021	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Styrene	ND	0.027	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
tert-Butylbenzene	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.018	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (4-6')
Collection Date: 4/30/2015 2:00:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.013	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
trans-1,2-DCE	ND	0.0094	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
trans-1,3-Dichloropropene	ND	0.026	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,3-Trichlorobenzene	ND	0.031	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,4-Trichlorobenzene	ND	0.027	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,1-Trichloroethane	ND	0.022	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,2-Trichloroethane	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Trichloroethene (TCE)	ND	0.014	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Trichlorofluoromethane	ND	0.044	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,3-Trichloropropane	ND	0.024	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Vinyl chloride	ND	0.058	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Xylenes, Total	0.26	0.040	0.29	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Surr: Dibromofluoromethane	99.8		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
Surr: 1,2-Dichloroethane-d4	92.2		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
Surr: Toluene-d8	102		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
Surr: 4-Bromofluorobenzene	93.4		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	12	3.6	14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Surr: BFB	102	0	67.4-150		%REC	5	5/5/2015 1:55:24 PM	R25982

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (18-20')
Collection Date: 4/30/2015 2:15:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	6.2	11		mg/Kg-dr	1	5/5/2015 8:32:10 PM	19001
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/5/2015 8:32:10 PM	19001
Surr: DNOP	97.6	0	57.9-140		%REC	1	5/5/2015 8:32:10 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0059	0.0032	0.037	J	mg/Kg-dr	1	5/14/2015 3:31:10 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Arsenic	2.2	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Barium	360	0.069	0.23		mg/Kg-dr	2	5/7/2015 2:28:50 PM	19081
Beryllium	0.99	0.0086	0.17		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Chromium	14	0.070	0.35		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Cobalt	7.6	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Iron	20000	70	290		mg/Kg-dr	100	5/7/2015 11:28:33 AM	19081
d	2.3	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
...anganese	860	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:50:50 PM	19081
Nickel	15	0.15	0.58		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Vanadium	49	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Zinc	21	0.75	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benz(a)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

C..ENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (18-20')
Collection Date: 4/30/2015 2:15:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Bis(2-chloroisopropyl)ether	ND	0.089	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Chloro-3-methylphenol	ND	0.12	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1 3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
3,3´-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dichlorophenol	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dimethylphenol	ND	0.091	0.35		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

C .ENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (18-20')
Collection Date: 4/30/2015 2:15:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Surr: 2-Fluorophenol	68.3		26.4-129		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: Phenol-d5	64.7		34.8-118		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: 2,4,6-Tribromophenol	62.6		26.8-128		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: Nitrobenzene-d5	63.0		35.8-124		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: 2-Fluorobiphenyl	68.8		24.5-139		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: 4-Terphenyl-d14	87.6		29.4-129		%REC	1	5/7/2015 2:36:36 PM	19054
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0159	0.000532	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Toluene	0.0115	0.000245	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Ethylbenzene	0.00242	0.000397	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Xylenes, Total	0.00807	0.00141	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000989	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,4-Trimethylbenzene	0.00229	0.000617	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,3,5-Trimethylbenzene	0.00151	0.000414	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000632	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000282	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Naphthalene	0.000873	0.000771	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1-Methylnaphthalene	ND	0.000927	0.00472		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Methylnaphthalene	ND	0.000922	0.00472		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Acetone	0.00359	0.00147	0.0118	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Bromobenzene	ND	0.000656	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (18-20')
Collection Date: 4/30/2015 2:15:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000319	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Bromoform	ND	0.000611	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Bromomethane	ND	0.00140	0.00354		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Butanone	ND	0.000756	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Carbon tetrachloride	ND	0.000427	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chlorobenzene	ND	0.000239	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chloroethane	ND	0.00236	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chloroform	ND	0.000486	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chloromethane	ND	0.000278	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Chlorotoluene	ND	0.000461	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Carbon disulfide	ND	0.00107	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
4-Chlorotoluene	ND	0.000455	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
cis-1,2-DCE	ND	0.000624	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
cis-1,3-Dichloropropene	ND	0.00236	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000693	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Dibromochloromethane	ND	0.000265	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Dibromomethane	ND	0.00134	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dichlorobenzene	ND	0.000524	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Dichlorobenzene	ND	0.000400	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,4-Dichlorobenzene	ND	0.000370	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Dichlorodifluoromethane	ND	0.000963	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1-Dichloroethane	ND	0.000551	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1-Dichloroethene	ND	0.000394	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dichloropropane	ND	0.000504	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,3-Dichloropropane	ND	0.000368	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2,2-Dichloropropane	ND	0.000410	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1-Dichloropropene	ND	0.000432	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Hexachlorobutadiene	ND	0.000476	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Isopropylbenzene	ND	0.000547	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
4-Isopropyltoluene	ND	0.000916	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Methylene chloride	ND	0.000583	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
n-Butylbenzene	ND	0.000969	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Hexanone	ND	0.000491	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
n-Propylbenzene	ND	0.000442	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
sec-Butylbenzene	0.000849	0.000596	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Styrene	ND	0.000391	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
4-Methyl-2-pentanone	ND	0.000996	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
tert-Butylbenzene	ND	0.000362	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000384	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-9 (18-20')
Collection Date: 4/30/2015 2:15:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000519	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Tetrachloroethene (PCE)	ND	0.000468	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
trans-1,2-DCE	ND	0.000381	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
trans-1,3-Dichloropropene	ND	0.000309	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,3-Trichlorobenzene	ND	0.000863	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,4-Trichlorobenzene	ND	0.000884	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1,1-Trichloroethane	ND	0.000336	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1,2-Trichloroethane	ND	0.00236	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Trichloroethene (TCE)	ND	0.000469	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Trichlorofluoromethane	ND	0.000477	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,3-Trichloropropane	ND	0.000829	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Vinyl chloride	ND	0.000269	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Surr: 1,2-Dichloroethane-d4	92.8	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
Surr: Dibromofluoromethane	97.3	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
Surr: Toluene-d8	97.1	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.91	3.6		mg/Kg-dr	1	5/6/2015 2:25:01 AM	R25982
Surr: BFB	104	0	67.4-150		%REC	1	5/6/2015 2:25:01 AM	R25982

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

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-9DUP02
Collection Date: 4/30/2015
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	530	6.6	12		mg/Kg-dr	1	5/5/2015 8:53:40 PM	19001
Motor Oil Range Organics (MRO)	170	60	60		mg/Kg-dr	1	5/5/2015 8:53:40 PM	19001
Surr: DNOP	108	0	57.9-140		%REC	1	5/5/2015 8:53:40 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	15	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0043	0.0035	0.039	J	mg/Kg-dr	1	5/14/2015 3:32:58 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Arsenic	1.3	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Barium	190	0.035	0.12		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Beryllium	0.90	0.0087	0.18		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Chromium	8.5	0.071	0.35		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Cobalt	4.1	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Iron	13000	71	290		mg/Kg-dr	100	5/7/2015 11:29:56 AM	19081
·d	3.3	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
...anganese	170	0.069	0.12		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Nickel	7.4	0.15	0.59		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Vanadium	19	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Zinc	49	0.75	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benz(a)anthracene	ND	0.092	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-9DUP02
Collection Date: 4/30/2015
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
3,3'-Dichlorobenzidine	ND	0.091	0.29		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1-Methylnaphthalene	0.70	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Methylnaphthalene	0.89	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-9DUP02
Collection Date: 4/30/2015
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Naphthalene	0.33	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Surr: 2-Fluorophenol	73.5		26.4-129		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: Phenol-d5	68.2		34.8-118		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: 2,4,6-Tribromophenol	77.9		26.8-128		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: Nitrobenzene-d5	69.8		35.8-124		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: 2-Fluorobiphenyl	71.3		24.5-139		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: 4-Terphenyl-d14	54.8		29.4-129		%REC	1	5/11/2015 12:54:59 PM	19087
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.049	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Toluene	ND	0.039	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Ethylbenzene	0.34	0.030	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.046	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,4-Trimethylbenzene	2.8	0.016	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,3,5-Trimethylbenzene	0.82	0.022	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dichloroethane (EDC)	ND	0.13	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dibromoethane (EDB)	ND	0.026	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Naphthalene	2.5	0.078	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1-Methylnaphthalene	9.3	0.20	1.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Methylnaphthalene	13	0.22	1.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Acetone	ND	0.24	4.9		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Bromobenzene	ND	0.024	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Bromodichloromethane	ND	0.027	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-9DUP02
Collection Date: 4/30/2015
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.026	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Bromomethane	ND	0.063	0.98		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Butanone	ND	0.21	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Carbon disulfide	ND	0.24	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Carbon tetrachloride	ND	0.032	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chlorobenzene	ND	0.025	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chloroethane	ND	0.25	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chloroform	ND	0.034	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chloromethane	ND	0.038	0.98		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Chlorotoluene	ND	0.037	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
4-Chlorotoluene	ND	0.025	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
cis-1,2-DCE	ND	0.041	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
cis-1,3-Dichloropropene	ND	0.023	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.056	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Dibromochloromethane	ND	0.025	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Dibromomethane	ND	0.034	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dichlorobenzene	ND	0.020	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,3-Dichlorobenzene	ND	0.039	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Dichlorobenzene	ND	0.041	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Dichlorodifluoromethane	ND	0.082	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1-Dichloroethane	ND	0.13	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1-Dichloroethene	ND	0.023	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dichloropropane	ND	0.018	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,3-Dichloropropane	ND	0.045	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2,2-Dichloropropane	ND	0.048	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1-Dichloropropene	ND	0.049	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Hexachlorobutadiene	ND	0.045	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Hexanone	ND	0.081	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Isopropylbenzene	0.16	0.028	0.33	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
4-Isopropyltoluene	0.21	0.023	0.33	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
4-Methyl-2-pentanone	ND	0.057	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Methylene chloride	ND	0.13	0.98		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
n-Butylbenzene	0.40	0.028	0.98	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
n-Propylbenzene	0.34	0.024	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
sec-Butylbenzene	0.17	0.047	0.33	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Styrene	ND	0.060	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
tert-Butylbenzene	ND	0.037	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.027	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.040	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10-9DUP02
Project: SWMU 10
Collection Date: 4/30/2015
Lab ID: 1505057-004
Matrix: SOIL
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.028	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
trans-1,2-DCE	ND	0.021	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
trans-1,3-Dichloropropene	ND	0.059	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,3-Trichlorobenzene	ND	0.070	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,4-Trichlorobenzene	ND	0.060	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,1-Trichloroethane	ND	0.050	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,2-Trichloroethane	ND	0.039	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Trichloroethene (TCE)	ND	0.032	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Trichlorofluoromethane	ND	0.099	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,3-Trichloropropane	ND	0.055	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Vinyl chloride	ND	0.13	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Xylenes, Total	1.9	0.091	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Surr: Dibromofluoromethane	94.7		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
Surr: 1,2-Dichloroethane-d4	86.7		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
Surr: Toluene-d8	98.9		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
Surr: 4-Bromofluorobenzene	74.8		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	69	8.2	33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	R25941
Surr: BFB	96.8	0	67.4-150		%REC	10	5/5/2015 5:18:50 AM	R25941

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (2-4')
Collection Date: 4/30/2015 10:10:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	9700	61	110		mg/Kg-dr	10	5/5/2015 9:36:30 PM	19001
Motor Oil Range Organics (MRO)	2000	550	550		mg/Kg-dr	10	5/5/2015 9:36:30 PM	19001
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/5/2015 9:36:30 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.015	0.0033	0.038	J	mg/Kg-dr	1	5/14/2015 3:34:46 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Arsenic	1.5	0.32	2.7	J	mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Barium	830	0.16	0.55		mg/Kg-dr	5	5/8/2015 2:52:27 PM	19081
Beryllium	0.65	0.0081	0.16		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Chromium	29	0.066	0.33		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Cobalt	3.9	0.042	0.33		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Iron	14000	66	270		mg/Kg-dr	100	5/7/2015 11:31:18 AM	19081
...d	4.5	0.12	0.27		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
...anganese	380	0.13	0.22		mg/Kg-dr	2	5/7/2015 2:40:16 PM	19081
Nickel	6.9	0.14	0.55		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Vanadium	22	0.037	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Zinc	17	0.71	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.4	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Acenaphthylene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Aniline	ND	0.99	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Anthracene	ND	0.97	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Azobenzene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benz(a)anthracene	ND	0.89	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(a)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(b)fluoranthene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(g,h,i)perylene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(k)fluoranthene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzoic acid	ND	0.65	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzyl alcohol	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Bis(2-chloroethoxy)methane	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (2-4')
Collection Date: 4/30/2015 10:10:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Bis(2-chloroisopropyl)ether	ND	0.87	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Bis(2-ethylhexyl)phthalate	ND	1.3	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Bromophenyl phenyl ether	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Butyl benzyl phthalate	ND	1.4	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Carbazole	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Chloro-3-methylphenol	ND	1.1	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Chloroaniline	ND	1.1	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Chloronaphthalene	ND	1.2	2.8		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Chlorophenol	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Chlorophenyl phenyl ether	ND	1.7	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Chrysene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Di-n-butyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Di-n-octyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Dibenz(a,h)anthracene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Dibenzofuran	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,2-Dichlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,3-Dichlorobenzene	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Dichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
3,3'-Dichlorobenzidine	ND	0.88	2.8		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Diethyl phthalate	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Dimethyl phthalate	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dichlorophenol	ND	1.1	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dimethylphenol	ND	0.89	3.4		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4,6-Dinitro-2-methylphenol	ND	0.62	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dinitrophenol	ND	0.47	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dinitrotoluene	ND	1.0	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,6-Dinitrotoluene	ND	1.3	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Fluoranthene	ND	1.4	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Fluorene	8.1	1.5	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachlorobutadiene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachlorocyclopentadiene	ND	0.79	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachloroethane	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Indeno(1,2,3-cd)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Isophorone	ND	1.2	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1-Methylnaphthalene	68	4.2	9.1		mg/Kg-dr	4	5/11/2015 3:27:10 PM	19087
2-Methylnaphthalene	89	4.2	9.1		mg/Kg-dr	4	5/11/2015 3:27:10 PM	19087
2-Methylphenol	ND	1.1	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087

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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (2-4')
Collection Date: 4/30/2015 10:10:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
N-Nitrosodi-n-propylamine	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
N-Nitrosodiphenylamine	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Naphthalene	18	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Nitroaniline	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
3-Nitroaniline	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Nitroaniline	ND	1.0	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Nitrobenzene	ND	1.2	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Nitrophenol	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Nitrophenol	ND	0.98	2.8		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Pentachlorophenol	ND	0.71	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Phenanthrene	15	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Phenol	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Pyrene	ND	1.5	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Pyridine	ND	0.96	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,2,4-Trichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4,5-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4,6-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
urr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/11/2015 2:18:55 PM	19087
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.20	0.097	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Toluene	0.48	0.078	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Ethylbenzene	1.4	0.060	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.092	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,4-Trimethylbenzene	9.7	0.033	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,3,5-Trimethylbenzene	4.7	0.043	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dichloroethane (EDC)	ND	0.26	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dibromoethane (EDB)	ND	0.052	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Naphthalene	7.8	0.16	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1-Methylnaphthalene	27	0.39	2.6		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Methylnaphthalene	41	0.43	2.6		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Acetone	ND	0.49	9.8		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Bromobenzene	ND	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Bromodichloromethane	ND	0.053	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

C. .ENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (2-4')
Collection Date: 4/30/2015 10:10:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.053	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Bromomethane	ND	0.13	2.0		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Butanone	ND	0.42	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Carbon disulfide	ND	0.47	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Carbon tetrachloride	ND	0.064	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chlorobenzene	ND	0.050	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chloroethane	ND	0.51	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chloroform	ND	0.068	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chloromethane	ND	0.076	2.0		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Chlorotoluene	ND	0.074	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
4-Chlorotoluene	ND	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
cis-1,2-DCE	ND	0.083	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
cis-1,3-Dichloropropene	ND	0.045	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Dibromochloromethane	ND	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Dibromomethane	ND	0.069	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dichlorobenzene	ND	0.039	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,3-Dichlorobenzene	ND	0.077	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Dichlorobenzene	ND	0.081	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Dichlorodifluoromethane	ND	0.16	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1-Dichloroethane	ND	0.26	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1-Dichloroethene	ND	0.045	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dichloropropane	ND	0.037	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,3-Dichloropropane	ND	0.090	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2,2-Dichloropropane	ND	0.095	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1-Dichloropropene	ND	0.097	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Hexachlorobutadiene	ND	0.091	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Hexanone	ND	0.16	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Isopropylbenzene	0.52	0.055	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
4-Isopropyltoluene	0.95	0.046	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
4-Methyl-2-pentanone	ND	0.11	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Methylene chloride	ND	0.26	2.0		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
n-Butylbenzene	1.2	0.056	2.0	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
n-Propylbenzene	0.85	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
sec-Butylbenzene	0.51	0.093	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Styrene	ND	0.12	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
tert-Butylbenzene	ND	0.075	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.054	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.079	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (2-4')
Collection Date: 4/30/2015 10:10:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.057	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
trans-1,2-DCE	ND	0.042	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
trans-1,3-Dichloropropene	ND	0.12	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,3-Trichlorobenzene	ND	0.14	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,4-Trichlorobenzene	ND	0.12	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,1-Trichloroethane	ND	0.099	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,2-Trichloroethane	ND	0.079	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Trichloroethene (TCE)	ND	0.064	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Trichlorofluoromethane	ND	0.20	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,3-Trichloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Vinyl chloride	ND	0.26	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Xylenes, Total	13	0.18	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Surr: Dibromofluoromethane	99.4		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
Surr: 1,2-Dichloroethane-d4	96.4		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
Surr: Toluene-d8	102		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
Surr: 4-Bromofluorobenzene	74.9		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	670	16	65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	R25941
Surr: BFB	105	0	67.4-150		%REC	20	5/5/2015 5:47:35 AM	R25941

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (4-6')
Collection Date: 4/30/2015 10:20:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	25	6.2	11		mg/Kg-dr	1	5/5/2015 10:19:18 PM	19001
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/5/2015 10:19:18 PM	19001
Surr: DNOP	108	0	57.9-140		%REC	1	5/5/2015 10:19:18 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.041	0.0032	0.036		mg/Kg-dr	1	5/14/2015 3:36:34 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Arsenic	1.9	0.33	2.8	J	mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Barium	130	0.034	0.11		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Beryllium	0.83	0.0084	0.17		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Chromium	11	0.068	0.34		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Cobalt	4.5	0.043	0.34		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Iron	13000	68	280		mg/Kg-dr	100	5/7/2015 11:32:40 AM	19081
d	3.4	0.12	0.28		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Manganese	370	0.13	0.23		mg/Kg-dr	2	5/7/2015 2:43:12 PM	19081
Nickel	7.8	0.15	0.57		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Vanadium	17	0.038	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Zinc	18	0.73	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benz(a)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (4-6')
Collection Date: 4/30/2015 10:20:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Chloro-3-methylphenol	ND	0.12	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
3,3'-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dichlorophenol	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dimethylphenol	ND	0.091	0.35		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1-Methylnaphthalene	0.26	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Methylnaphthalene	0.35	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (4-6')
Collection Date: 4/30/2015 10:20:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Naphthalene	0.15	0.11	0.23	J	mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Surr: 2-Fluorophenol	47.2		26.4-129		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: Phenol-d5	45.1		34.8-118		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: 2,4,6-Tribromophenol	56.2		26.8-128		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: Nitrobenzene-d5	47.4		35.8-124		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: 2-Fluorobiphenyl	51.0		24.5-139		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: 4-Terphenyl-d14	40.0		29.4-129		%REC	1	5/11/2015 2:46:44 PM	19087
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.047	0.0047	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Toluene	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Ethylbenzene	0.044	0.0029	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.0044	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,4-Trimethylbenzene	0.021	0.0016	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,3,5-Trimethylbenzene	0.0048	0.0021	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.013	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Naphthalene	0.14	0.0075	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1-Methylnaphthalene	0.37	0.019	0.13		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Methylnaphthalene	0.30	0.021	0.13		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Acetone	ND	0.023	0.47		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Bromobenzene	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Bromodichloromethane	ND	0.0026	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (4-6')
Collection Date: 4/30/2015 10:20:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Bromomethane	ND	0.0061	0.094		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Butanone	ND	0.020	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Carbon disulfide	ND	0.023	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Carbon tetrachloride	ND	0.0031	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chlorobenzene	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chloroethane	ND	0.024	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chloroform	ND	0.0033	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chloromethane	ND	0.0036	0.094		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Chlorotoluene	ND	0.0035	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
4-Chlorotoluene	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
cis-1,2-DCE	ND	0.0040	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
cis-1,3-Dichloropropene	ND	0.0022	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.0054	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Dibromochloromethane	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Dibromomethane	ND	0.0033	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dichlorobenzene	ND	0.0019	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,3-Dichlorobenzene	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Dichlorobenzene	ND	0.0039	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Dichlorodifluoromethane	ND	0.0079	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1-Dichloroethane	ND	0.013	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1-Dichloroethene	ND	0.0022	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dichloropropane	ND	0.0018	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,3-Dichloropropane	ND	0.0043	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2,2-Dichloropropane	ND	0.0046	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1-Dichloropropene	ND	0.0047	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Hexachlorobutadiene	ND	0.0044	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Hexanone	ND	0.0077	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Isopropylbenzene	0.012	0.0026	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
4-Isopropyltoluene	0.014	0.0022	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
4-Methyl-2-pentanone	ND	0.0054	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Methylene chloride	ND	0.013	0.094		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
n-Butylbenzene	0.023	0.0027	0.094	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
n-Propylbenzene	0.026	0.0023	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
sec-Butylbenzene	0.011	0.0045	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Styrene	ND	0.0058	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
tert-Butylbenzene	ND	0.0036	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.0026	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.0038	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (4-6')
Collection Date: 4/30/2015 10:20:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0027	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
trans-1,2-DCE	ND	0.0020	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
trans-1,3-Dichloropropene	ND	0.0056	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,3-Trichlorobenzene	ND	0.0067	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,4-Trichlorobenzene	ND	0.0058	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,1-Trichloroethane	ND	0.0048	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,2-Trichloroethane	ND	0.0038	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Trichloroethene (TCE)	ND	0.0031	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Trichlorofluoromethane	ND	0.0095	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,3-Trichloropropane	ND	0.0053	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Vinyl chloride	ND	0.013	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Xylenes, Total	0.016	0.0087	0.063	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Surr: Dibromofluoromethane	98.4		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
Surr: 1,2-Dichloroethane-d4	91.2		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
Surr: Toluene-d8	93.5		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
Surr: 4-Bromofluorobenzene	89.3		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
;oline Range Organics (GRO)	10	0.79	3.1		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Surr: BFB	113	0	67.4-150		%REC	1	5/5/2015 2:53:06 PM	R25982

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-007 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (18-20')
Collection Date: 4/30/2015 10:35:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	6.3	11		mg/Kg-dr	1	5/5/2015 10:40:37 PM	19001
Motor Oil Range Organics (MRO)	ND	57	57		mg/Kg-dr	1	5/5/2015 10:40:37 PM	19001
Surr: DNOP	99.4	0	57.9-140		%REC	1	5/5/2015 10:40:37 PM	19001
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0037	0.0034	0.039	J	mg/Kg-dr	1	5/14/2015 3:42:07 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Arsenic	2.0	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Barium	470	0.068	0.23		mg/Kg-dr	2	5/7/2015 2:46:11 PM	19081
Beryllium	0.99	0.0085	0.17		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Chromium	20	0.069	0.34		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Cobalt	8.7	0.043	0.34		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Iron	17000	69	290		mg/Kg-dr	100	5/7/2015 11:34:04 AM	19081
d	0.27	0.12	0.29	J	mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
...anganese	1200	0.34	0.57		mg/Kg-dr	5	5/8/2015 2:54:10 PM	19081
Nickel	16	0.15	0.57		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Vanadium	15	0.038	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Zinc	24	0.74	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benz(a)anthracene	ND	0.090	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-007 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (18-20')
Collection Date: 4/30/2015 10:35:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
3,3'-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dimethylphenol	ND	0.090	0.35		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-007 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (18-20')
Collection Date: 4/30/2015 10:35:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Nitrophenol	ND	0.099	0.29		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Surr: 2-Fluorophenol	57.6		26.4-129		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: Phenol-d5	59.6		34.8-118		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: 2,4,6-Tribromophenol	69.7		26.8-128		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: Nitrobenzene-d5	57.5		35.8-124		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: 2-Fluorobiphenyl	70.0		24.5-139		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: 4-Terphenyl-d14	54.8		29.4-129		%REC	1	5/13/2015 2:38:36 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0178	0.000429	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Toluene	0.0122	0.000198	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Ethylbenzene	0.00285	0.000320	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Xylenes, Total	0.00872	0.00114	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000798	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,4-Trimethylbenzene	0.00236	0.000497	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,3,5-Trimethylbenzene	0.00159	0.000334	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000510	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000228	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Naphthalene	0.000809	0.000622	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1-Methylnaphthalene	ND	0.000747	0.00381		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Methylnaphthalene	ND	0.000744	0.00381		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Acetone	0.00466	0.00119	0.00952	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Bromobenzene	ND	0.000530	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-007 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (18-20')
Collection Date: 4/30/2015 10:35:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000257	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Bromoform	ND	0.000493	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Bromomethane	ND	0.00113	0.00285		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Butanone	ND	0.000609	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Carbon tetrachloride	ND	0.000344	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chlorobenzene	ND	0.000193	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chloroethane	ND	0.00190	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chloroform	ND	0.000392	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chloromethane	ND	0.000224	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Chlorotoluene	ND	0.000371	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Carbon disulfide	ND	0.000861	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
4-Chlorotoluene	ND	0.000367	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
cis-1,2-DCE	ND	0.000503	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
cis-1,3-Dichloropropene	ND	0.00190	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000559	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Dibromochloromethane	ND	0.000213	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Dibromomethane	ND	0.00108	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dichlorobenzene	ND	0.000422	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,3-Dichlorobenzene	ND	0.000323	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,4-Dichlorobenzene	ND	0.000299	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Dichlorodifluoromethane	ND	0.000777	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1-Dichloroethane	ND	0.000445	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1-Dichloroethene	ND	0.000318	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dichloropropane	ND	0.000407	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,3-Dichloropropane	ND	0.000296	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2,2-Dichloropropane	ND	0.000331	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1-Dichloropropene	ND	0.000349	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Hexachlorobutadiene	ND	0.000384	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Isopropylbenzene	0.000447	0.000442	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
4-Isopropyltoluene	ND	0.000739	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Methylene chloride	ND	0.000470	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
n-Butylbenzene	ND	0.000781	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Hexanone	ND	0.000396	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
n-Propylbenzene	0.000428	0.000356	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
sec-Butylbenzene	0.000714	0.000481	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Styrene	ND	0.000315	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
4-Methyl-2-pentanone	ND	0.000804	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
tert-Butylbenzene	ND	0.000292	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000310	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505057-007 **Matrix:** SOIL

Client Sample ID: SWMU 10-8 (18-20')
Collection Date: 4/30/2015 10:35:00 AM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000418	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Tetrachloroethene (PCE)	ND	0.000377	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
trans-1,2-DCE	ND	0.000308	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
trans-1,3-Dichloropropene	ND	0.000249	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,3-Trichlorobenzene	ND	0.000696	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,4-Trichlorobenzene	ND	0.000713	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1,1-Trichloroethane	ND	0.000271	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1,2-Trichloroethane	ND	0.00190	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Trichloroethene (TCE)	ND	0.000378	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Trichlorofluoromethane	ND	0.000385	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,3-Trichloropropane	ND	0.000668	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Vinyl chloride	ND	0.000217	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Surr: 1,2-Dichloroethane-d4	93.4	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
Surr: 4-Bromofluorobenzene	95.8	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
Surr: Dibromofluoromethane	99.8	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
Surr: Toluene-d8	84.7	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.88	3.5		mg/Kg-dr	1	5/6/2015 2:53:53 AM	R25982
Surr: BFB	105	0	67.4-150		%REC	1	5/6/2015 2:53:53 AM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-001C SWMU 10-9 2-4 FT

Project # :

Collected By :
Collection Date : 04/30/15 13:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	120		mV	2580 B-2011	05/10/15	1
pH	7.7	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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L762972-01 (PH) - 7.7 at 20.5C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-002C SWMU 10-09 4-6 FT

Project # :

Collected By :
Collection Date : 04/30/15 14:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	110		mV	2580 B-2011	05/10/15	1
pH	7.8	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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L762972-02 (PH) - 7.8 at 21.0C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-003C SWMU 10-9 18-20 FT

Project # :

Collected By :
Collection Date : 04/30/15 14:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	100		mV	2580 B-2011	05/10/15	1
pH	8.5	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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L762972-03 (PH) - 8.5 at 21.0C

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-04

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-004C SWMU 10-9 DUP02

Project # :

Collected By :
Collection Date : 04/30/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	110		mV	2580 B-2011	05/10/15	1
pH	7.6	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-04 (PH) - 7.6 at 21.5c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-05

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-005C SWMU 10-8 2-4 FT

Project # :

Collected By :
Collection Date : 04/30/15 10:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	100		mV	2580 B-2011	05/10/15	1
pH	8.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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L762972-05 (PH) - 8.3 at 21.2c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
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Albuquerque, NM 87109

ESC Sample # : L762972-06

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-006C SWMU 10-8 4-6 FT

Project # :

Collected By :
Collection Date : 04/30/15 10:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	120		mV	2580 B-2011	05/10/15	1
pH	7.7	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-06 (PH) - 7.7 at 20.8c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762972-07

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-007C SWMU 10-8 18-20 FT

Project # :

Collected By :
Collection Date : 04/30/15 10:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	190		mV	2580 B-2011	05/10/15	1
pH	8.7	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-07 (PH) - 8.7 at 20.3c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

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Quality Assurance Report
Level II

L762972

May 13, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG786845	05/07/15 05:34
Chromium,Hexavalent	< 2	mg/kg			WG787134	05/09/15 04:55
Cyanide	< .25	mg/kg			WG787733	05/12/15 10:23

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L762970-04	WG786845
pH	su	7.80	7.80	0.385	1	L762507-04	WG787133
pH	su	8.00	8.10	1.12*	1	L763345-03	WG787133
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L762972-07	WG787134
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chromium,Hexavalent	mg/kg	59.8	65.2	109.	80-120	WG786845
pH	su	7.84	7.82	99.7	98.3-101.7	WG787133
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
Chromium,Hexavalent	mg/kg	59.8	66.4	111.	80-120	WG787134
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chromium,Hexavalent	mg/kg	65.8	65.2	110.	80-120	0.916	20	WG786845
pH	su	7.81	7.82	100.	98.3-101.7	0.128	20	WG787133

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L762972

May 13, 2015

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
Chromium,Hexavalent	mg/kg	66.6	66.4	111.	80-120	0.301	20	WG787134
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.8	0.0	20	100.	75-125	L762970-04	WG786845
Chromium,Hexavalent	mg/kg	19.3	0.0	20	96.0	75-125	L762972-07	WG787134

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.8	20.8	104.	75-125	0.0	20	L762970-04	WG786845
Chromium,Hexavalent	mg/kg	19.5	19.3	97.5	75-125	1.03	20	L762972-07	WG787134

Batch number /Run number / Sample number cross reference

WG786845: R3035419: L762972-01 02 03 04 05
WG787133: R3035650: L762972-01 02 03
WG787168: R3035796: L762972-04 05 06 07
WG787134: R3035910: L762972-06 07
WG787860: R3036066: L762972-01 02 03 04 05 06 07
WG787733: R3036388: L762972-01 02 03 04 05 06 07

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19001**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19001**	RunNo: **25956**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **769479** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		116	57.9	140			

Sample ID **LCS-19001**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19001**	RunNo: **25956**
Prep Date: **5/1/2015**	Analysis Date: **5/5/2015**	SeqNo: **769591** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	114	67.8	130			
Surr: DNOP	6.3		5.000		127	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
--	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**
08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**	
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**	
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0091	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.054	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.038	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.0048	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
..	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,[illegible]-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	97.5	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Chlorobenzene	1.0	0.050	1.000	0	99.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	123	60.6	134			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.3	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1[illegible] Trimethylbenzene	ND	0.050								
1, [illegible]hloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
[illegible]	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**
08-Oct-15

C[illegible]t: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**	
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**	
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4[illegible]yl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

C t: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
..	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

C ..nt: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19032**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771128** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
F enzene	ND	0.00200								
λ, .es, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19032**		SampType: **MBLK**			TestCode: **Method 8260B/5035LOW: VOLATILES**						
Client ID: **PBS**		Batch ID: **19032**			RunNo: **26013**						
Prep Date: **5/4/2015**		Analysis Date: **5/6/2015**			SeqNo: **771129**			Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Carbon disulfide	ND	0.0100									
4-Chlorotoluene	ND	0.00200									
cis-1,2-DCE	ND	0.00200									
cis-1,3-Dichloropropene	ND	0.00200									
1,2-Dibromo-3-chloropropane	ND	0.00200									
Dibromochloromethane	ND	0.00200									
Dibromomethane	ND	0.00200									
1,2-Dichlorobenzene	ND	0.00200									
1,3-Dichlorobenzene	ND	0.00200									
1,4-Dichlorobenzene	ND	0.00200									
Dichlorodifluoromethane	ND	0.00200									
1,1-Dichloroethane	ND	0.00200									
1,1-Dichloroethene	ND	0.00200									
1,2-Dichloropropane	ND	0.00200									
1,3-Dichloropropane	ND	0.00200									
2,2-Dichloropropane	ND	0.00200									
1,1-Dichloropropene	ND	0.00200									
[illegible]hlorobutadiene	ND	0.00200									
Isopropylbenzene	ND	0.00200									
4-Isopropyltoluene	ND	0.00200									
Methylene chloride	ND	0.00200									
n-Butylbenzene	ND	0.00200									
2-Hexanone	ND	0.0100									
n-Propylbenzene	ND	0.00200									
sec-Butylbenzene	ND	0.00200									
Styrene	ND	0.00200									
4-Methyl-2-pentanone	ND	0.0100									
tert-Butylbenzene	ND	0.00200									
1,1,1,2-Tetrachloroethane	ND	0.00200									
1,1,2,2-Tetrachloroethane	ND	0.00200									
Tetrachloroethene (PCE)	ND	0.00200									
trans-1,2-DCE	ND	0.00200									
trans-1,3-Dichloropropene	ND	0.00200									
1,2,3-Trichlorobenzene	ND	0.00200									
1,2,4-Trichlorobenzene	ND	0.00200									
1,1,1-Trichloroethane	ND	0.00200									
1,1,2-Trichloroethane	ND	0.00200									
Trichloroethene (TCE)	ND	0.00200									
Trichlorofluoromethane	ND	0.00200									

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**	
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**	
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19054**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19054**	RunNo: **26018**	
Prep Date: **5/5/2015**	Analysis Date: **5/6/2015**	SeqNo: **771331**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
F enzyl phthalate	ND	0.20								
Ca azole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
..	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

C nt: Western Refining Company

Project: SWMU 10

Sample ID **mb-19054**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19054**	RunNo: **26018**
Prep Date: **5/5/2015**	Analysis Date: **5/6/2015**	SeqNo: **771331** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2 aniline	ND	0.20								
3-[illegible]oaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.9		3.330		58.4	26.4	129			
Surr: Phenol-d5	2.2		3.330		65.5	34.8	118			
Surr: 2,4,6-Tribromophenol	2.3		3.330		70.3	26.8	128			
Surr: Nitrobenzene-d5	1.1		1.670		65.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.1		1.670		67.9	24.5	139			
Surr: 4-Terphenyl-d14	1.8		1.670		108	29.4	129			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- .. Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19054**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19054**	RunNo: **26018**
Prep Date: **5/5/2015**	Analysis Date: **5/6/2015**	SeqNo: **771332** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.2	45.8	114			
4-Chloro-3-methylphenol	2.4	0.50	3.330	0	72.5	52.3	122			
2-Chlorophenol	2.1	0.20	3.330	0	61.9	49.9	115			
1,4-Dichlorobenzene	1.0	0.20	1.670	0	62.1	43.7	107			
2,4-Dinitrotoluene	0.91	0.50	1.670	0	54.7	36	106			
N-Nitrosodi-n-propylamine	1.1	0.20	1.670	0	66.8	39.5	110			
4-Nitrophenol	2.2	0.25	3.330	0	64.7	45.1	121			
Pentachlorophenol	1.9	0.40	3.330	0	57.2	23.7	111			
Phenol	2.2	0.20	3.330	0	66.1	52.7	119			
Pyrene	1.0	0.20	1.670	0	61.3	50.4	116			
1,2,4-Trichlorobenzene	1.2	0.20	1.670	0	72.1	40.1	114			
Surr: 2-Fluorophenol	1.8		3.330		55.1	26.4	129			
Surr: Phenol-d5	2.1		3.330		63.9	34.8	118			
Surr: 2,4,6-Tribromophenol	1.9		3.330		58.5	26.8	128			
Surr: Nitrobenzene-d5	1.1		1.670		62.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.0		1.670		61.8	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		75.1	29.4	129			

Sample ID **mb-19026**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772520** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Sample ID **lcs-19026**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772521** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- .. Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19026**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19026**	RunNo: **26053**
Prep Date: **5/4/2015**	Analysis Date: **5/7/2015**	SeqNo: **772521** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Sample ID **MB-19087**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774670** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
F[illegible]ic acid	ND	0.50								
B[illegible]l alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
..	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

C ..t: Western Refining Company

Project: SWMU 10

Sample ID **MB-19087**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19087**	RunNo: **26117**	
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774670**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
' ylnaphthalene	ND	0.20								
2-..nylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.8		3.330		85.4	26.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
..	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19087**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774670** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Phenol-d5	2.8		3.330		84.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		86.3	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		90.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		98.8	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.6	29.4	129			

Sample ID **lcs-19087**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774671** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.20	1.670	0	72.6	45.8	114			
4-Chloro-3-methylphenol	2.5	0.50	3.330	0	74.7	52.3	122			
2-Chlorophenol	2.4	0.20	3.330	0	70.8	49.9	115			
1,4-Dichlorobenzene	1.2	0.20	1.670	0	71.5	43.7	107			
2,4-Dinitrotoluene	1.0	0.50	1.670	0	60.6	36	106			
N-Nitrosodi-n-propylamine	1.2	0.20	1.670	0	73.6	39.5	110			
4-[illegible]phenol	2.5	0.25	3.330	0	75.7	45.1	121			
Pe[illegible]chlorophenol	2.3	0.40	3.330	0	69.3	23.7	111			
Phenol	2.5	0.20	3.330	0	74.1	52.7	119			
Pyrene	1.1	0.20	1.670	0	68.6	50.4	116			
1,2,4-Trichlorobenzene	1.5	0.20	1.670	0	87.6	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		76.8	26.4	129			
Surr: Phenol-d5	2.6		3.330		78.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		82.5	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		87.0	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.6	24.5	139			
Surr: 4-Terphenyl-d14	1.0		1.670		61.0	29.4	129			

Sample ID **1505057-004Bms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-9DUP02**	Batch ID: **19087**	RunNo: **26117**
Prep Date: **5/6/2015**	Analysis Date: **5/11/2015**	SeqNo: **774677** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.7	0.24	1.964	0	84.2	36.3	121			
4-Chloro-3-methylphenol	3.1	0.59	3.916	0	78.1	48.2	119			
2-Chlorophenol	2.9	0.24	3.916	0	75.3	37.2	114			
1,4-Dichlorobenzene	1.6	0.24	1.964	0	81.7	28.8	106			
2,4-Dinitrotoluene	2.0	0.59	1.964	0	100	34.6	111			
N-Nitrosodi-n-propylamine	2.0	0.24	1.964	0	101	32.7	117			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **1505057-004Bms** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **SWMU 10-9DUP02** Batch ID: **19087** RunNo: **26117**

Prep Date: **5/6/2015** Analysis Date: **5/11/2015** SeqNo: **774677** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Nitrophenol	3.7	0.29	3.916	0	94.7	30.1	134			
Pentachlorophenol	2.6	0.47	3.916	0	66.9	24	120			
Phenol	3.1	0.24	3.916	0	80.2	38.3	118			
Pyrene	1.7	0.24	1.964	0	84.7	38.3	134			
1,2,4-Trichlorobenzene	1.7	0.24	1.964	0	84.2	31.8	110			
Surr: 2-Fluorophenol	3.2		3.916		82.5	26.4	129			
Surr: Phenol-d5	3.2		3.916		81.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.6		3.916		66.5	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.964		80.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.964		76.1	24.5	139			
Surr: 4-Terphenyl-d14	1.2		1.964		62.9	29.4	129			

Sample ID **1505057-004Bmsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **SWMU 10-9DUP02** Batch ID: **19087** RunNo: **26117**

Prep Date: **5/6/2015** Analysis Date: **5/11/2015** SeqNo: **774678** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
A[illegible]ohthene	2.0	0.24	1.971	0	100	36.3	121	18.0	25.4	
4[illegible]oro-3-methylphenol	2.9	0.59	3.930	0	72.7	48.2	119	6.77	30.4	
2-Chlorophenol	2.8	0.24	3.930	0	72.1	37.2	114	3.91	33.4	
1,4-Dichlorobenzene	1.5	0.24	1.971	0	75.4	28.8	106	7.67	20.9	
2,4-Dinitrotoluene	2.1	0.59	1.971	0	105	34.6	111	5.69	27.9	
N-Nitrosodi-n-propylamine	1.8	0.24	1.971	0	93.0	32.7	117	7.78	27.5	
4-Nitrophenol	3.3	0.30	3.930	0	84.3	30.1	134	11.3	33.7	
Pentachlorophenol	2.2	0.47	3.930	0	55.5	24	120	18.2	39.7	
Phenol	2.9	0.24	3.930	0	72.9	38.3	118	9.17	30.1	
Pyrene	1.7	0.24	1.971	0	85.5	38.3	134	1.33	22.7	
1,2,4-Trichlorobenzene	1.5	0.24	1.971	0	76.8	31.8	110	8.76	27.8	
Surr: 2-Fluorophenol	3.0		3.930		76.0	26.4	129	0	0	
Surr: Phenol-d5	3.0		3.930		75.1	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	2.0		3.930		51.5	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.6		1.971		80.7	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.4		1.971		69.9	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.2		1.971		60.4	29.4	129	0	0	

Sample ID **mb-19157** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **PBS** Batch ID: **19157** RunNo: **26173**

Prep Date: **5/11/2015** Analysis Date: **5/13/2015** SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

C t: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBS**	Batch ID: **19157**		RunNo: **26173**		
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**		SeqNo: **776628**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Prep enzyl phthalate	ND	0.20								
Ca azole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
entach	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

C nt: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2 aniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
..	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19157** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS** Batch ID: **19157** RunNo: **26173**

Prep Date: **5/11/2015** Analysis Date: **5/13/2015** SeqNo: **776629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Sample ID **1505057-007Bms** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **SWMU 10-8 (18-20')** Batch ID: **19157** RunNo: **26173**

Prep Date: **5/11/2015** Analysis Date: **5/13/2015** SeqNo: **776631** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.23	1.925	0	57.3	36.3	121			
4-Chloro-3-methylphenol	2.3	0.58	3.839	0	58.6	48.2	119			
2-Chlorophenol	1.9	0.23	3.839	0	49.6	37.2	114			
1,4-Dichlorobenzene	1.0	0.23	1.925	0	52.9	28.8	106			
2,4-Dinitrotoluene	0.94	0.58	1.925	0	48.6	34.6	111			
N-Nitrosodi-n-propylamine	1.1	0.23	1.925	0	57.5	32.7	117			
4-Nitrophenol	2.3	0.29	3.839	0	59.6	30.1	134			
Pentachlorophenol	2.2	0.46	3.839	0.1505	52.7	24	120			
Phenol	2.1	0.23	3.839	0	55.1	38.3	118			
Pyrene	0.96	0.23	1.925	0	50.0	38.3	134			
1,2,4-Trichlorobenzene	1.1	0.23	1.925	0	58.0	31.8	110			
Surr: 2-Fluorophenol	2.2		3.839		56.5	26.4	129			
Surr: Phenol-d5	2.2		3.839		58.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.839		65.9	26.8	128			
Surr: Nitrobenzene-d5	1.1		1.925		57.0	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.925		63.4	24.5	139			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- .. Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

C ..nt: Western Refining Company

Project: SWMU 10

Sample ID **1505057-007Bms** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **SWMU 10-8 (18-20')** Batch ID: **19157** RunNo: **26173**

Prep Date: **5/11/2015** Analysis Date: **5/13/2015** SeqNo: **776631** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.1		1.925		55.2	29.4	129			

Sample ID **1505057-007Bmsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **SWMU 10-8 (18-20')** Batch ID: **19157** RunNo: **26173**

Prep Date: **5/11/2015** Analysis Date: **5/13/2015** SeqNo: **776632** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.23	1.936	0	58.5	36.3	121	2.67	25.4	
4-Chloro-3-methylphenol	2.4	0.58	3.860	0	61.0	48.2	119	4.55	30.4	
2-Chlorophenol	1.9	0.23	3.860	0	50.1	37.2	114	1.64	33.4	
1,4-Dichlorobenzene	1.0	0.23	1.936	0	53.4	28.8	106	1.47	20.9	
2,4-Dinitrotoluene	0.96	0.58	1.936	0	49.6	34.6	111	2.52	27.9	
N-Nitrosodi-n-propylamine	1.1	0.23	1.936	0	59.2	32.7	117	3.34	27.5	
4-Nitrophenol	2.4	0.29	3.860	0	62.6	30.1	134	5.42	33.7	
Pentachlorophenol	2.2	0.46	3.860	0.1505	53.7	24	120	2.23	39.7	
Phenol	2.1	0.23	3.860	0	55.5	38.3	118	1.36	30.1	
Pyrene	0.99	0.23	1.936	0	51.3	38.3	134	3.13	22.7	
1 Trichlorobenzene	1.2	0.23	1.936	0	61.5	31.8	110	6.24	27.8	
.: 2-Fluorophenol	2.1		3.860		55.5	26.4	129	0	0	
Surr: Phenol-d5	2.3		3.860		60.6	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	2.6		3.860		66.4	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.1		1.936		56.1	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.2		1.936		62.6	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.1		1.936		55.7	29.4	129	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
..	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19227	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury						
Client ID:	PBS	Batch ID:	19227	RunNo:	26201						
Prep Date:	5/14/2015	Analysis Date:	5/14/2015	SeqNo:	777418	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.033								

Sample ID	LCS-19227	SampType:	LCS	TestCode:	EPA Method 7471: Mercury						
Client ID:	LCSS	Batch ID:	19227	RunNo:	26201						
Prep Date:	5/14/2015	Analysis Date:	5/14/2015	SeqNo:	777419	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.17	0.033	0.1667	0	100	80	120			

Sample ID	MB-19445	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury						
Client ID:	PBS	Batch ID:	19445	RunNo:	26497						
Prep Date:	5/28/2015	Analysis Date:	5/29/2015	SeqNo:	787358	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.033								

Sample ID	LCS-19445	SampType:	LCS	TestCode:	EPA Method 7471: Mercury						
Client ID:	LCSS	Batch ID:	19445	RunNo:	26497						
Prep Date:	5/28/2015	Analysis Date:	5/29/2015	SeqNo:	787359	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.17	0.033	0.1667	0	99.7	80	120			

Sample ID	1505057-001BMS	SampType:	MS	TestCode:	EPA Method 7471: Mercury						
Client ID:	SWMU 10-9 (2-4')	Batch ID:	19445	RunNo:	26497						
Prep Date:	5/28/2015	Analysis Date:	5/29/2015	SeqNo:	787390	Units:	mg/Kg-dry				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.34	0.21	0.2110	0.07022	127	75	125			S

Sample ID	1505057-001BMSD	SampType:	MSD	TestCode:	EPA Method 7471: Mercury						
Client ID:	SWMU 10-9 (2-4')	Batch ID:	19445	RunNo:	26497						
Prep Date:	5/28/2015	Analysis Date:	5/29/2015	SeqNo:	787391	Units:	mg/Kg-dry				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.41	0.20	0.1970	0.07022	172	75	125	19.2	20	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-19081	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals
Client ID:	LCSS	Batch ID:	19081	RunNo:	26050
Prep Date:	5/6/2015	Analysis Date:	5/7/2015	SeqNo:	772230 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	99.7	80	120			
Arsenic	25	2.5	25.00	0	99.5	80	120			
Barium	24	0.10	25.00	0	97.4	80	120			
Beryllium	26	0.15	25.00	0	105	80	120			
Cadmium	25	0.10	25.00	0	98.6	80	120			
Chromium	25	0.30	25.00	0	99.6	80	120			
Cobalt	24	0.30	25.00	0	97.1	80	120			
Iron	26	2.5	25.00	0	104	80	120			B
Lead	25	0.25	25.00	0	99.3	80	120			
Manganese	25	0.10	25.00	0	98.4	80	120			
Nickel	24	0.50	25.00	0	96.7	80	120			
Selenium	25	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	98.1	80	120			

Sample ID	MB-19081	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals
Client ID:	PBS	Batch ID:	19081	RunNo:	26050
Prep Date:	5/6/2015	Analysis Date:	5/7/2015	SeqNo:	772232 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	3.8	2.5								
Lead	0.14	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505057**

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R25941**	RunNo: **25941**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **770909** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R25941**	RunNo: **25941**
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **770910** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	79.9	135			
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771006** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.7	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771007** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505057** RcptNo: **1**

Received by/date: AT 05/01/15

Logged By: **Lindsay Mangin** **5/1/2015 1:50:00 PM**

Completed By: **Lindsay Mangin** **5/2/2015 10:01:27 AM**

Reviewed By: AG 05/04/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☑ No ☐ Not Present ☐
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: [redacted]
Sample Temp: [redacted]

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	[redacted]	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) MRO	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
4-30-15	1350	SOIL	SWMU 10-9 (2-4')	JARS-2	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MeOH	-001										✓					
				VIALS-2	SOBI	-001										✓					
	1400	SOIL	SWMU 10-9 (4-6')	JARS-2	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MeOH	-002										✓					
				VIALS-2	SOBI	-002										✓					
	1415	SOIL	SWMU 10-9 (18-20')	JARS-2	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MeOH	-003										✓					
				VIALS-2	SOBI	-003										✓					
	—	SOIL	SWMU 10-9 DUP02	JARS-2	NEAT	-004			✓							✓	✓	✓			
				~~JARS~~ VIALS-2	MeOH	-004										✓					
				VIALS-2	SOBI	-004										✓					

Date	Time	Relinquished by	Received by	Date	Time
5-1-15	0730	[signature]	[signature]	5/1/15	11/37
5-1-15	1350	[signature]	[signature]	05/01/15	1350

Remarks:

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505057	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
30-15	1010	SOIL	SWMU 10-8(2-4')	JARS-2	NEAT	-005			✓							✓	✓	✓			
↓	↓	↓	↓	VIALS-2	MeOH	-005										✓					
	↓	↓	↓	VIALS-2	SOBI	-005										✓					
	1020	SOIL	SWMU 10-8(4-6')	JARS-2	NEAT	-006			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-006										✓					
	↓	↓	↓	VIALS-2	SOBI	-006										✓					
	1035	SOIL	SWMU 10-8(18-20')	JARS-2	NEAT	-007			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-007										✓					
↓	↓	↓	↓	VIALS-2	SOBI	-007										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
5-1-15	0730	[signature]	[signature]	5-1-15	11:37
Date:	Time:	Relinquished by:	Received by:	Date	Time
-1-15	13:50	[signature]	[signature]	05/01/15	1550

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505058

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 14, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505058**
Date: **10/12/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (2-4')
Collection Date: 4/30/2015 3:30:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	59	5.5	9.9		mg/Kg-dr	1	5/5/2015 10:54:12 PM	19040
Motor Oil Range Organics (MRO)	98	50	50		mg/Kg-dr	1	5/5/2015 10:54:12 PM	19040
Surr: DNOP	119	0	57.9-140		%REC	1	5/5/2015 10:54:12 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.044	0.0032	0.036		mg/Kg-dr	1	5/14/2015 3:43:58 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Arsenic	2.4	0.32	2.7	J	mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Barium	450	0.065	0.22		mg/Kg-dr	2	5/7/2015 2:49:05 PM	19081
Beryllium	0.28	0.0081	0.16		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Chromium	13	0.066	0.33		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Cobalt	3.1	0.042	0.33		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Iron	9200	66	270		mg/Kg-dr	100	5/7/2015 11:35:25 AM	19081
d	4.1	0.12	0.27		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
..anganese	94	0.064	0.11		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Nickel	4.4	0.14	0.55		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Vanadium	21	0.037	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Zinc	15	0.71	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.28	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Acenaphthylene	ND	0.23	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Aniline	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Anthracene	ND	0.19	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Azobenzene	ND	0.25	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benz(a)anthracene	ND	0.18	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(a)pyrene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(b)fluoranthene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(g,h,i)perylene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(k)fluoranthene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzoic acid	ND	0.13	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzyl alcohol	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Bis(2-chloroethoxy)methane	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (2-4')
Collection Date: 4/30/2015 3:30:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.17	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.26	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Bromophenyl phenyl ether	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Butyl benzyl phthalate	ND	0.28	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Carbazole	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Chloro-3-methylphenol	ND	0.23	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Chloroaniline	ND	0.21	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Chloronaphthalene	ND	0.24	0.57		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Chlorophenol	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Chlorophenyl phenyl ether	ND	0.34	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Chrysene	ND	0.23	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Di-n-butyl phthalate	ND	0.26	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Di-n-octyl phthalate	ND	0.25	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Dibenz(a,h)anthracene	ND	0.25	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Dibenzofuran	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,2-Dichlorobenzene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,3-Dichlorobenzene	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,4-Dichlorobenzene	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
3,3'-Dichlorobenzidine	ND	0.18	0.57		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Diethyl phthalate	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Dimethyl phthalate	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dichlorophenol	ND	0.23	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dimethylphenol	ND	0.18	0.68		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.12	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dinitrophenol	ND	0.094	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dinitrotoluene	ND	0.20	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,6-Dinitrotoluene	ND	0.25	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Fluoranthene	ND	0.28	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Fluorene	ND	0.31	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachlorobenzene	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachlorobutadiene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachlorocyclopentadiene	ND	0.16	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachloroethane	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Isophorone	ND	0.24	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1-Methylnaphthalene	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Methylnaphthalene	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Methylphenol	ND	0.23	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (2-4')
Collection Date: 4/30/2015 3:30:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
N-Nitrosodi-n-propylamine	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
N-Nitrosodiphenylamine	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Naphthalene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Nitroaniline	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
3-Nitroaniline	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Nitroaniline	ND	0.20	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Nitrobenzene	ND	0.23	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Nitrophenol	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Nitrophenol	ND	0.20	0.57		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Pentachlorophenol	ND	0.14	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Phenanthrene	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Phenol	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Pyrene	ND	0.29	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Pyridine	ND	0.19	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,2,4-Trichlorobenzene	ND	0.23	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4,5-Trichlorophenol	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4,6-Trichlorophenol	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Surr: 2-Fluorophenol	59.3		26.4-129		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: Phenol-d5	58.8		34.8-118		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: 2,4,6-Tribromophenol	69.7		26.8-128		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: Nitrobenzene-d5	62.5		35.8-124		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: 2-Fluorobiphenyl	63.4		24.5-139		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: 4-Terphenyl-d14	55.4		29.4-129		%REC	1	5/13/2015 4:01:32 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	ND	0.000359	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Toluene	0.000255	0.000166	0.00159	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Ethylbenzene	ND	0.000268	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Xylenes, Total	ND	0.000951	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000668	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,4-Trimethylbenzene	ND	0.000417	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,3,5-Trimethylbenzene	ND	0.000280	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000427	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000191	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Naphthalene	ND	0.000521	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1-Methylnaphthalene	ND	0.000626	0.00319		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Methylnaphthalene	ND	0.000623	0.00319		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Acetone	0.00792	0.000996	0.00797	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Bromobenzene	ND	0.000444	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (2-4')
Collection Date: 4/30/2015 3:30:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000215	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Bromoform	ND	0.000413	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Bromomethane	ND	0.000943	0.00239		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Butanone	0.00161	0.000510	0.00797	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Carbon tetrachloride	ND	0.000289	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chlorobenzene	ND	0.000162	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chloroform	ND	0.000328	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chloromethane	ND	0.000188	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Chlorotoluene	ND	0.000311	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Carbon disulfide	ND	0.000721	0.00797		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
4-Chlorotoluene	ND	0.000307	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
cis-1,2-DCE	ND	0.000422	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
cis-1,3-Dichloropropene	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000468	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Dibromochloromethane	ND	0.000179	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Dibromomethane	ND	0.000905	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dichlorobenzene	ND	0.000354	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,3-Dichlorobenzene	ND	0.000270	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,4-Dichlorobenzene	ND	0.000250	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Dichlorodifluoromethane	ND	0.000651	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1-Dichloroethane	ND	0.000372	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1-Dichloroethene	ND	0.000266	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dichloropropane	ND	0.000341	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,3-Dichloropropane	ND	0.000248	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2,2-Dichloropropane	ND	0.000277	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1-Dichloropropene	ND	0.000292	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Hexachlorobutadiene	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Isopropylbenzene	ND	0.000370	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
4-Isopropyltoluene	ND	0.000619	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Methylene chloride	0.000510	0.000394	0.00159	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
n-Butylbenzene	ND	0.000654	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Hexanone	0.000582	0.000332	0.00797	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
n-Propylbenzene	ND	0.000298	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
sec-Butylbenzene	ND	0.000403	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Styrene	ND	0.000264	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
4-Methyl-2-pentanone	ND	0.000673	0.00797		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
tert-Butylbenzene	ND	0.000244	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000259	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (2-4')
Collection Date: 4/30/2015 3:30:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000351	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Tetrachloroethene (PCE)	ND	0.000316	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
trans-1,2-DCE	ND	0.000258	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
trans-1,3-Dichloropropene	ND	0.000208	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,3-Trichlorobenzene	ND	0.000583	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,4-Trichlorobenzene	ND	0.000597	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1,1-Trichloroethane	ND	0.000227	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1,2-Trichloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Trichloroethene (TCE)	ND	0.000317	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Trichlorofluoromethane	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,3-Trichloropropane	ND	0.000560	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Vinyl chloride	ND	0.000182	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Surr: 1,2-Dichloroethane-d4	95.0	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
Surr: 4-Bromofluorobenzene	93.1	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
Surr: Toluene-d8	87.9	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.74	2.9		mg/Kg-dr	1	5/6/2015 3:22:42 AM	R25982
Surr: BFB	104	0	67.4-150		%REC	1	5/6/2015 3:22:42 AM	R25982

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (4-6')
Collection Date: 4/30/2015 3:45:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	8900	53	95		mg/Kg-dr	10	5/5/2015 11:48:21 PM	19040
Motor Oil Range Organics (MRO)	1600	480	480		mg/Kg-dr	10	5/5/2015 11:48:21 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/5/2015 11:48:21 PM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	18	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.012	0.0034	0.039	J	mg/Kg-dr	1	5/14/2015 3:45:49 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Arsenic	1.6	0.35	2.9	J	mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Barium	360	0.070	0.24		mg/Kg-dr	2	5/7/2015 2:51:53 PM	19081
Beryllium	0.93	0.0087	0.18		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Chromium	12	0.071	0.35		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Cobalt	4.1	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Iron	13000	71	290		mg/Kg-dr	100	5/7/2015 11:36:48 AM	19081
[illegible]d	4.0	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
[illegible]anganese	170	0.069	0.12		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Nickel	7.7	0.15	0.59		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Vanadium	18	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Zinc	19	0.76	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.5	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Acenaphthylene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Aniline	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Anthracene	ND	1.0	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Azobenzene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benz(a)anthracene	ND	0.95	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(a)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(b)fluoranthene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(g,h,i)perylene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(k)fluoranthene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzoic acid	ND	0.69	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzyl alcohol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Bis(2-chloroethoxy)methane	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (4-6')
Collection Date: 4/30/2015 3:45:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.93	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Bis(2-ethylhexyl)phthalate	ND	1.4	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Bromophenyl phenyl ether	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Butyl benzyl phthalate	ND	1.5	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Carbazole	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Chloro-3-methylphenol	ND	1.2	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Chloroaniline	ND	1.1	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Chloronaphthalene	ND	1.3	3.0		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Chlorophenol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Chlorophenyl phenyl ether	ND	1.8	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Chrysene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Di-n-butyl phthalate	ND	1.4	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Di-n-octyl phthalate	ND	1.4	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Dibenz(a,h)anthracene	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Dibenzofuran	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,2-Dichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,3-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,4-Dichlorobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
3,3'-Dichlorobenzidine	ND	0.93	3.0		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Diethyl phthalate	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Dimethyl phthalate	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dichlorophenol	ND	1.2	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dimethylphenol	ND	0.95	3.6		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.66	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dinitrophenol	ND	0.50	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dinitrotoluene	ND	1.1	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,6-Dinitrotoluene	ND	1.3	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Fluoranthene	ND	1.5	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Fluorene	2.2	1.7	2.4	J	mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachlorobutadiene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachlorocyclopentadiene	ND	0.84	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachloroethane	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Indeno(1,2,3-cd)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Isophorone	ND	1.3	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1-Methylnaphthalene	17	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Methylnaphthalene	25	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Methylphenol	ND	1.2	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (4-6')
Collection Date: 4/30/2015 3:45:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
N-Nitrosodi-n-propylamine	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
N-Nitrosodiphenylamine	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Naphthalene	5.9	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Nitroaniline	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
3-Nitroaniline	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Nitroaniline	ND	1.1	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Nitrobenzene	ND	1.2	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Nitrophenol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Nitrophenol	ND	1.0	3.0		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Pentachlorophenol	ND	0.76	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Phenanthrene	4.1	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Phenol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Pyrene	ND	1.6	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Pyridine	ND	1.0	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,2,4-Trichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4,5-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4,6-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/13/2015 4:29:18 PM	19157
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.20	0.088	0.60	J	mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Toluene	5.0	0.071	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Ethylbenzene	3.6	0.055	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.084	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,4-Trimethylbenzene	13	0.030	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,3,5-Trimethylbenzene	4.7	0.039	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.24	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.047	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Naphthalene	11	0.14	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1-Methylnaphthalene	28	0.36	2.4		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Methylnaphthalene	48	0.39	2.4		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Acetone	ND	0.44	8.9		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Bromobenzene	ND	0.044	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Bromodichloromethane	ND	0.049	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (4-6')
Collection Date: 4/30/2015 3:45:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.048	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Bromomethane	ND	0.12	1.8		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Butanone	ND	0.38	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Carbon disulfide	ND	0.43	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Carbon tetrachloride	ND	0.058	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chlorobenzene	ND	0.046	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chloroethane	ND	0.46	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chloroform	ND	0.062	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chloromethane	ND	0.069	1.8		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Chlorotoluene	ND	0.067	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
4-Chlorotoluene	ND	0.045	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
cis-1,2-DCE	ND	0.075	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
cis-1,3-Dichloropropene	ND	0.041	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.10	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Dibromochloromethane	ND	0.045	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Dibromomethane	ND	0.063	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dichlorobenzene	ND	0.036	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,3-Dichlorobenzene	ND	0.070	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,4-Dichlorobenzene	ND	0.074	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Dichlorodifluoromethane	ND	0.15	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1-Dichloroethane	ND	0.24	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1-Dichloroethene	ND	0.041	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dichloropropane	ND	0.033	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,3-Dichloropropane	ND	0.082	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2,2-Dichloropropane	ND	0.087	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1-Dichloropropene	ND	0.089	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Hexachlorobutadiene	ND	0.083	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Hexanone	ND	0.15	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Isopropylbenzene	1.2	0.050	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
4-Isopropyltoluene	0.74	0.042	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
4-Methyl-2-pentanone	ND	0.10	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Methylene chloride	ND	0.24	1.8		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
n-Butylbenzene	1.4	0.051	1.8	J	mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
n-Propylbenzene	1.8	0.045	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
sec-Butylbenzene	0.75	0.085	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Styrene	ND	0.11	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
tert-Butylbenzene	ND	0.068	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.049	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.072	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (4-6')
Collection Date: 4/30/2015 3:45:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.052	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
trans-1,2-DCE	ND	0.039	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
trans-1,3-Dichloropropene	ND	0.11	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,3-Trichlorobenzene	ND	0.13	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,4-Trichlorobenzene	ND	0.11	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,1-Trichloroethane	ND	0.091	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,2-Trichloroethane	ND	0.072	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Trichloroethene (TCE)	ND	0.058	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Trichlorofluoromethane	ND	0.18	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,3-Trichloropropane	ND	0.10	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Vinyl chloride	ND	0.24	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Xylenes, Total	29	0.17	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Surr: Dibromofluoromethane	94.2		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
Surr: 1,2-Dichloroethane-d4	93.4		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
Surr: Toluene-d8	104		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
Surr: 4-Bromofluorobenzene	76.2		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	560	15	60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Surr: BFB	96.7	0	67.4-150		%REC	20	5/5/2015 3:21:56 PM	R25982

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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (18-20')
Collection Date: 4/30/2015 3:55:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	9.9		mg/Kg-dr	1	5/6/2015 12:14:58 AM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/6/2015 12:14:58 AM	19040
Surr: DNOP	102	0	57.9-140		%REC	1	5/6/2015 12:14:58 AM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	15	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0032	0.037		mg/Kg-dr	1	5/14/2015 3:47:40 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	2.7	1.5	2.9	J	mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Arsenic	1.9	0.34	2.9	J	mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Barium	240	0.035	0.12		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Beryllium	1.0	0.0086	0.17		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Chromium	14	0.070	0.35		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Cobalt	7.9	0.044	0.35		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Iron	20000	70	290		mg/Kg-dr	100	5/8/2015 2:23:33 PM	19081
d	2.0	0.13	0.29		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Manganese	990	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:21:51 PM	19081
Nickel	17	0.15	0.58		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Vanadium	21	0.039	2.9		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Zinc	25	0.75	2.9		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (18-20')
Collection Date: 4/30/2015 3:55:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
3,3'-Dichlorobenzidine	ND	0.091	0.29		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dimethylphenol	ND	0.093	0.35		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (18-20')
Collection Date: 4/30/2015 3:55:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Surr: 2-Fluorophenol	83.7		26.4-129		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: Phenol-d5	84.5		34.8-118		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: 2,4,6-Tribromophenol	82.7		26.8-128		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: Nitrobenzene-d5	81.4		35.8-124		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: 2-Fluorobiphenyl	82.4		24.5-139		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: 4-Terphenyl-d14	73.6		29.4-129		%REC	1	5/13/2015 4:56:50 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0180	0.000419	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Toluene	0.0104	0.000193	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Ethylbenzene	0.00241	0.000312	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Xylenes, Total	0.00797	0.00111	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000779	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,4-Trimethylbenzene	0.00238	0.000486	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,3,5-Trimethylbenzene	0.00151	0.000326	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000498	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000222	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Naphthalene	0.000725	0.000607	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1-Methylnaphthalene	ND	0.000730	0.00372		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Methylnaphthalene	ND	0.000726	0.00372		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Acetone	0.00422	0.00116	0.00929	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Bromobenzene	ND	0.000517	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (18-20')
Collection Date: 4/30/2015 3:55:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000251	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Bromoform	ND	0.000481	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Bromomethane	ND	0.00110	0.00279		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Butanone	0.00159	0.000595	0.00929	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Carbon tetrachloride	ND	0.000336	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chlorobenzene	ND	0.000188	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chloroethane	ND	0.00186	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chloroform	ND	0.000383	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chloromethane	ND	0.000219	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Chlorotoluene	ND	0.000363	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Carbon disulfide	ND	0.000841	0.00929		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
4-Chlorotoluene	ND	0.000358	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
cis-1,2-DCE	ND	0.000491	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
cis-1,3-Dichloropropene	ND	0.00186	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000546	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Dibromochloromethane	ND	0.000208	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Dibromomethane	ND	0.00105	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dichlorobenzene	ND	0.000412	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,3-Dichlorobenzene	ND	0.000315	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,4-Dichlorobenzene	ND	0.000292	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Dichlorodifluoromethane	ND	0.000759	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1-Dichloroethane	ND	0.000434	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1-Dichloroethene	ND	0.000310	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dichloropropane	ND	0.000397	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,3-Dichloropropane	ND	0.000289	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2,2-Dichloropropane	ND	0.000323	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1-Dichloropropene	ND	0.000340	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Hexachlorobutadiene	ND	0.000375	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Isopropylbenzene	ND	0.000431	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
4-Isopropyltoluene	ND	0.000721	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Methylene chloride	ND	0.000459	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
n-Butylbenzene	ND	0.000763	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Hexanone	ND	0.000387	0.00929		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
n-Propylbenzene	0.000372	0.000348	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
sec-Butylbenzene	0.000688	0.000469	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Styrene	ND	0.000308	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
4-Methyl-2-pentanone	ND	0.000785	0.00929		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
tert-Butylbenzene	ND	0.000285	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000302	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505058-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-10 (18-20')
Collection Date: 4/30/2015 3:55:00 PM
Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000409	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Tetrachloroethene (PCE)	ND	0.000368	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
trans-1,2-DCE	ND	0.000300	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
trans-1,3-Dichloropropene	ND	0.000243	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,3-Trichlorobenzene	ND	0.000680	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,4-Trichlorobenzene	ND	0.000696	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1,1-Trichloroethane	ND	0.000264	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1,2-Trichloroethane	ND	0.00186	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Trichloroethene (TCE)	ND	0.000369	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Trichlorofluoromethane	ND	0.000375	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,3-Trichloropropane	ND	0.000652	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Vinyl chloride	ND	0.000212	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
Surr: 4-Bromofluorobenzene	99.2	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
Surr: Dibromofluoromethane	102	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
Surr: Toluene-d8	88.2	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.93	3.7		mg/Kg-dr	1	5/6/2015 3:51:34 AM	R25982
Surr: BFB	107	0	67.4-150		%REC	1	5/6/2015 3:51:34 AM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762974-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505058-001C SWMU 10-10 2-4 FT

Project # :

Collected By :
Collection Date : 04/30/15 15:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	190		mV	2580 B-2011	05/10/15	1
pH	7.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762974-01 (PH) - 7.3 at 21.1c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762974-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505058-002C SWMU 10-10 4-6 FT

Project # :

Collected By :
Collection Date : 04/30/15 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	180		mV	2580 B-2011	05/10/15	1
pH	7.8	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762974-02 (PH) - 7.8 at 21.5c

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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762974-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505058-003C SWMU 10-10 18-20 FT

Project # :

Collected By :
Collection Date : 04/30/15 15:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	150		mV	2580 B-2011	05/10/15	1
pH	9.1	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762974-03 (PH) - 9.1 at 21.0c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762974

May 13, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG787134	05/09/15 04:55
Cyanide	< .25	mg/kg			WG787733	05/12/15 10:23

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L762972-07	WG787134
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
Chromium,Hexavalent	mg/kg	59.8	66.4	111.	80-120	WG787134
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
Chromium,Hexavalent	mg/kg	66.6	66.4	111.	80-120	0.301	20	WG787134
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.3	0.0	20	96.0	75-125	L762972-07	WG787134

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.5	19.3	97.5	75-125	1.03	20	L762972-07	WG787134

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19040**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.4	57.9	140			

Sample ID **LCS-19040**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769702** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19008**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768949** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID **lcs-19008**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19008**	RunNo: **25941**
Prep Date: **5/1/2015**	Analysis Date: **5/4/2015**	SeqNo: **768950** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**		SampType: **MBLK**			TestCode: **EPA Method 8260B: Volatiles**						
Client ID: **PBS**		Batch ID: **R25982**			RunNo: **25982**						
Prep Date:		Analysis Date: **5/5/2015**			SeqNo: **770974**			Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloroethane	ND	0.10									
Chloroform	ND	0.050									
Chloromethane	ND	0.15									
2-Chlorotoluene	ND	0.050									
4-Chlorotoluene	ND	0.050									
cis-1,2-DCE	ND	0.050									
cis-1,3-Dichloropropene	ND	0.050									
1,2-Dibromo-3-chloropropane	ND	0.10									
Dibromochloromethane	ND	0.050									
Dibromomethane	ND	0.050									
1,2-Dichlorobenzene	ND	0.050									
1,3-Dichlorobenzene	ND	0.050									
1,4-Dichlorobenzene	ND	0.050									
Dichlorodifluoromethane	ND	0.050									
1,1-Dichloroethane	ND	0.050									
1,1-Dichloroethene	ND	0.050									
1,2-Dichloropropane	ND	0.050									
[illegible]-hloropropane	ND	0.050									
2,2-Dichloropropane	ND	0.10									
1,1-Dichloropropene	ND	0.10									
Hexachlorobutadiene	ND	0.10									
2-Hexanone	ND	0.50									
Isopropylbenzene	ND	0.050									
4-Isopropyltoluene	ND	0.050									
4-Methyl-2-pentanone	ND	0.50									
Methylene chloride	ND	0.15									
n-Butylbenzene	ND	0.15									
n-Propylbenzene	ND	0.050									
sec-Butylbenzene	ND	0.050									
Styrene	ND	0.050									
tert-Butylbenzene	ND	0.050									
1,1,1,2-Tetrachloroethane	ND	0.050									
1,1,2,2-Tetrachloroethane	ND	0.050									
Tetrachloroethene (PCE)	ND	0.050									
trans-1,2-DCE	ND	0.050									
trans-1,3-Dichloropropene	ND	0.050									
1,2,3-Trichlorobenzene	ND	0.10									
1,2,4-Trichlorobenzene	ND	0.050									
1,1,1-Trichloroethane	ND	0.050									

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770974** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **770975** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

C ıt: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19032**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771128** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
F enzene	ND	0.00200								
X, es, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**MB-19032**	SampType:	**MBLK**		TestCode:	**Method 8260B/5035LOW: VOLATILES**					
Client ID:	**PBS**	Batch ID:	**19032**		RunNo:	**26013**					
Prep Date:	**5/4/2015**	Analysis Date:	**5/6/2015**		SeqNo:	**771129**		Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19032**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**	
Client ID: **PBS**	Batch ID: **19032**	RunNo: **26013**	
Prep Date: **5/4/2015**	Analysis Date: **5/6/2015**	SeqNo: **771129**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
[illegible]enzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**	
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
[illegible]aniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19157**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
____	Sample Diluted Due to Matrix	E	Value above quantitation range
"ha"	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

C[illegible]nt: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19227**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**				
Client ID:	**PBS**	Batch ID:	**19227**	RunNo:	**26201**				
Prep Date:	**5/14/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**777418**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19227**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**				
Client ID:	**LCSS**	Batch ID:	**19227**	RunNo:	**26201**				
Prep Date:	**5/14/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**777419**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

C ..nt: Western Refining Company

Project: SWMU 10

Sample ID **LCS-19081** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **LCSS** Batch ID: **19081** RunNo: **26050**

Prep Date: **5/6/2015** Analysis Date: **5/7/2015** SeqNo: **772230** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	99.7	80	120			
Arsenic	25	2.5	25.00	0	99.5	80	120			
Barium	24	0.10	25.00	0	97.4	80	120			
Beryllium	26	0.15	25.00	0	105	80	120			
Cadmium	25	0.10	25.00	0	98.6	80	120			
Chromium	25	0.30	25.00	0	99.6	80	120			
Cobalt	24	0.30	25.00	0	97.1	80	120			
Iron	26	2.5	25.00	0	104	80	120			B
Lead	25	0.25	25.00	0	99.3	80	120			
Manganese	25	0.10	25.00	0	98.4	80	120			
Nickel	24	0.50	25.00	0	96.7	80	120			
Selenium	25	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	98.1	80	120			

Sample ID **MB-19081** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**

t ID: **PBS** Batch ID: **19081** RunNo: **26050**

Prep Date: **5/6/2015** Analysis Date: **5/7/2015** SeqNo: **772232** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	3.8	2.5								
Lead	0.14	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505058**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **PBS**	Batch ID: **R25941**	RunNo: **25941**							
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **770909**	Units: **%REC**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **R25941**	RunNo: **25941**							
Prep Date:	Analysis Date: **5/4/2015**	SeqNo: **770910**	Units: **%REC**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**							
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771006**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.7	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**							
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771007**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505058** RcptNo: **1**

Received by/date: AT 05/01/15

Logged By: **Lindsay Mangin** **5/1/2015 1:50:00 PM**

Completed By: **Lindsay Mangin** **5/2/2015 10:08:22 AM**

Reviewed By: AG 05/04/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☑ No ☐ Not Present ☐
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING, SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM. 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☑ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☑ EDD (Type) EXCEL

Turn-Around Time:
☑ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505058	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
30.15	1530	SOIL	SWMU 10-10 (2-4')	JARS-2	NEAT	-001			✓							✓	✓	✓			
↓	↓	↓	↓	VIALS-2	MeOH	-001										✓					
				VIALS-2	SOBI	-001										✓					
	1545	SOIL	SWMU 10-10 (11-13)	JARS-2	NEAT	-002			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-002										✓					
				VIALS-2	SOBI	-002										✓					
	1555	SOIL	SWMU 10-10 (18-20')	JARS-2	NEAT	-003			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-003										✓					
↓				VIALS-2	SOBI	-003										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
1.15	0730			5/1/15	11/38
Date:	Time:	Relinquished by:	Received by:	Date	Time
1-15	13:50			05/01/15	1550

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505059

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 17, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (2-4')
Collection Date: 5/1/2015 10:10:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	39	5.5	9.9		mg/Kg-dr	1	5/6/2015 12:41:57 AM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/6/2015 12:41:57 AM	19040
Surr: DNOP	107	0	57.9-140		%REC	1	5/6/2015 12:41:57 AM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.033	0.0033	0.038	J	mg/Kg-dr	1	5/14/2015 3:49:30 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/8/2015 2:55:49 PM	19080
Arsenic	2.1	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Barium	220	0.036	0.12		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Beryllium	0.85	0.0088	0.18		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Chromium	11	0.072	0.36		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Cobalt	4.8	0.045	0.36		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Iron	15000	72	300		mg/Kg-dr	100	5/9/2015 10:14:39 AM	19080
J	2.7	0.13	0.30		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Manganese	860	0.35	0.60		mg/Kg-dr	5	5/8/2015 3:02:21 PM	19080
Nickel	8.4	0.15	0.60		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Vanadium	23	0.040	3.0		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Zinc	20	0.77	3.0		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.29	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Acenaphthylene	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Aniline	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Anthracene	ND	0.20	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Azobenzene	ND	0.26	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benz(a)anthracene	ND	0.19	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(a)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(b)fluoranthene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(g,h,i)perylene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(k)fluoranthene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzoic acid	ND	0.13	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzyl alcohol	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Bis(2-chloroethoxy)methane	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (2-4')
Collection Date: 5/1/2015 10:10:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.18	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.27	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Bromophenyl phenyl ether	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Butyl benzyl phthalate	ND	0.29	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Carbazole	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Chloro-3-methylphenol	ND	0.24	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Chloroaniline	ND	0.22	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Chloronaphthalene	ND	0.25	0.59		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Chlorophenol	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Chlorophenyl phenyl ether	ND	0.35	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Chrysene	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Di-n-butyl phthalate	ND	0.27	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Di-n-octyl phthalate	ND	0.26	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Dibenz(a,h)anthracene	ND	0.26	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Dibenzofuran	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1,2-Dichlorobenzene	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Dichlorobenzene	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
., ,-Dichlorobenzene	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
3,3'-Dichlorobenzidine	ND	0.18	0.59		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Diethyl phthalate	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Dimethyl phthalate	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dichlorophenol	ND	0.24	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dimethylphenol	ND	0.19	0.71		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.13	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dinitrophenol	ND	0.098	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dinitrotoluene	ND	0.21	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,6-Dinitrotoluene	ND	0.26	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Fluoranthene	ND	0.29	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Fluorene	ND	0.32	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachlorobenzene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachlorobutadiene	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachlorocyclopentadiene	ND	0.16	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachloroethane	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Isophorone	ND	0.25	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Methylphenol	ND	0.24	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (2-4')
Collection Date: 5/1/2015 10:10:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
N-Nitrosodi-n-propylamine	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
N-Nitrosodiphenylamine	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Naphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Nitroaniline	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
3-Nitroaniline	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Nitroaniline	ND	0.21	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Nitrobenzene	ND	0.24	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Nitrophenol	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Nitrophenol	ND	0.20	0.59		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Pentachlorophenol	ND	0.15	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Phenanthrene	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Phenol	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Pyrene	ND	0.30	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Pyridine	ND	0.20	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1,2,4-Trichlorobenzene	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4,5-Trichlorophenol	ND	0.28	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
6-Trichlorophenol	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Surr: 2-Fluorophenol	61.5		26.4-129		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: Phenol-d5	65.5		34.8-118		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: 2,4,6-Tribromophenol	75.1		26.8-128		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: Nitrobenzene-d5	61.2		35.8-124		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: 2-Fluorobiphenyl	69.1		24.5-139		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: 4-Terphenyl-d14	59.2		29.4-129		%REC	1	5/13/2015 5:24:41 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00239	0.000435	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Toluene	0.00181	0.000201	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Ethylbenzene	0.000502	0.000325	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Xylenes, Total	0.00146	0.00115	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Methyl tert-butyl ether (MTBE)	0.00140	0.000809	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,4-Trimethylbenzene	ND	0.000505	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,3,5-Trimethylbenzene	ND	0.000339	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000517	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000231	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Naphthalene	ND	0.000631	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1-Methylnaphthalene	ND	0.000758	0.00386		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Methylnaphthalene	ND	0.000754	0.00386		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Acetone	0.0111	0.00121	0.00965		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Bromobenzene	ND	0.000537	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (2-4')
Collection Date: 5/1/2015 10:10:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000261	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Bromoform	ND	0.000500	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Bromomethane	ND	0.00114	0.00290		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Butanone	0.00273	0.000618	0.00965	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Carbon tetrachloride	ND	0.000349	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chlorobenzene	ND	0.000196	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chloroform	ND	0.000398	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chloromethane	ND	0.000228	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Chlorotoluene	ND	0.000377	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Carbon disulfide	ND	0.000874	0.00965		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
4-Chlorotoluene	ND	0.000372	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
cis-1,2-DCE	ND	0.000511	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
cis-1,3-Dichloropropene	ND	0.00193	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000567	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Dibromochloromethane	ND	0.000217	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Dibromomethane	ND	0.00110	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Dichlorobenzene	ND	0.000428	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
[illegible]-Dichlorobenzene	ND	0.000327	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,4-Dichlorobenzene	ND	0.000303	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Dichlorodifluoromethane	ND	0.000788	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1-Dichloroethane	0.000473	0.000451	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1-Dichloroethene	ND	0.000322	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dichloropropane	ND	0.000413	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,3-Dichloropropane	ND	0.000301	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2,2-Dichloropropane	ND	0.000335	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1-Dichloropropene	ND	0.000354	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Hexachlorobutadiene	ND	0.000390	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Isopropylbenzene	ND	0.000448	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
4-Isopropyltoluene	ND	0.000749	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Methylene chloride	0.000637	0.000477	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
n-Butylbenzene	ND	0.000793	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Hexanone	0.000724	0.000402	0.00965	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
n-Propylbenzene	ND	0.000361	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
sec-Butylbenzene	ND	0.000488	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Styrene	ND	0.000320	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
4-Methyl-2-pentanone	ND	0.000815	0.00965		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
tert-Butylbenzene	ND	0.000296	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000314	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (2-4')
Collection Date: 5/1/2015 10:10:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000424	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Tetrachloroethene (PCE)	ND	0.000383	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
trans-1,2-DCE	ND	0.000312	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
trans-1,3-Dichloropropene	ND	0.000252	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,3-Trichlorobenzene	ND	0.000706	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,4-Trichlorobenzene	ND	0.000723	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1,1-Trichloroethane	ND	0.000275	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1,2-Trichloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Trichloroethene (TCE)	ND	0.000384	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Trichlorofluoromethane	ND	0.000390	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,3-Trichloropropane	ND	0.000678	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Vinyl chloride	ND	0.000220	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Surr: 1,2-Dichloroethane-d4	98.3	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
Surr: 4-Bromofluorobenzene	91.7	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
Surr: Toluene-d8	87.4	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.74	3.0		mg/Kg-dr	1	5/6/2015 4:20:25 AM	R25982
Surr: BFB	105	0	67.4-150		%REC	1	5/6/2015 4:20:25 AM	R25982

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (4-6')
Collection Date: 5/1/2015 10:20:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/6/2015 1:09:05 AM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/6/2015 1:09:05 AM	19040
Surr: DNOP	105	0	57.9-140		%REC	1	5/6/2015 1:09:05 AM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0057	0.0035	0.040	J	mg/Kg-dr	1	5/14/2015 3:51:14 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	7.9	15		mg/Kg-dr	5	5/8/2015 3:05:50 PM	19080
Arsenic	2.2	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Barium	200	0.036	0.12		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Beryllium	0.92	0.0089	0.18		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Chromium	11	0.072	0.36		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Cobalt	5.7	0.045	0.36		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Iron	16000	72	300		mg/Kg-dr	100	5/7/2015 11:49:08 AM	19080
[illegible]	2.5	0.13	0.30		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Manganese	710	0.35	0.60		mg/Kg-dr	5	5/8/2015 3:05:50 PM	19080
Nickel	10	0.15	0.60		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Vanadium	24	0.040	3.0		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Zinc	19	0.77	3.0		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzoic acid	ND	0.068	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzyl alcohol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (4-6')
Collection Date: 5/1/2015 10:20:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.091	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Di-n-butyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Di-n-octyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
,,-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
3,3'-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dichlorophenol	ND	0.12	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dimethylphenol	ND	0.093	0.36		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Methylphenol	ND	0.12	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (4-6')
Collection Date: 5/1/2015 10:20:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Nitroaniline	ND	0.11	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Pentachlorophenol	ND	0.074	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Pyridine	ND	0.10	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Surr: 2-Fluorophenol	60.7		26.4-129		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: Phenol-d5	61.3		34.8-118		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: 2,4,6-Tribromophenol	73.6		26.8-128		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: Nitrobenzene-d5	60.5		35.8-124		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: 2-Fluorobiphenyl	67.1		24.5-139		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: 4-Terphenyl-d14	63.6		29.4-129		%REC	1	5/13/2015 5:52:34 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0123	0.000401	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Toluene	0.00801	0.000185	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Ethylbenzene	0.00188	0.000300	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Xylenes, Total	0.00622	0.00106	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Methyl tert-butyl ether (MTBE)	0.000891	0.000747	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,4-Trimethylbenzene	0.00194	0.000466	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,3,5-Trimethylbenzene	0.00119	0.000313	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000477	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000213	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Naphthalene	ND	0.000582	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1-Methylnaphthalene	ND	0.000700	0.00356		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Methylnaphthalene	ND	0.000696	0.00356		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Acetone	0.00723	0.00111	0.00891	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Bromobenzene	ND	0.000496	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (4-6')
Collection Date: 5/1/2015 10:20:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000241	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Bromoform	ND	0.000462	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Bromomethane	ND	0.00105	0.00267		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Butanone	0.00175	0.000570	0.00891	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Carbon tetrachloride	ND	0.000322	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chlorobenzene	ND	0.000181	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chloroethane	ND	0.00178	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chloroform	ND	0.000367	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chloromethane	ND	0.000210	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Chlorotoluene	ND	0.000348	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Carbon disulfide	ND	0.000806	0.00891		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
4-Chlorotoluene	ND	0.000343	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
cis-1,2-DCE	ND	0.000471	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
cis-1,3-Dichloropropene	ND	0.00178	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000523	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Dibromochloromethane	ND	0.000200	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Dibromomethane	ND	0.00101	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Dichlorobenzene	ND	0.000395	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,3-Dichlorobenzene	ND	0.000302	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,4-Dichlorobenzene	ND	0.000280	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Dichlorodifluoromethane	ND	0.000727	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1-Dichloroethane	ND	0.000416	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1-Dichloroethene	ND	0.000297	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dichloropropane	ND	0.000381	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,3-Dichloropropane	ND	0.000277	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2,2-Dichloropropane	ND	0.000310	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1-Dichloropropene	ND	0.000326	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Hexachlorobutadiene	ND	0.000359	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Isopropylbenzene	ND	0.000413	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
4-Isopropyltoluene	ND	0.000691	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Methylene chloride	0.000686	0.000440	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
n-Butylbenzene	ND	0.000731	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Hexanone	ND	0.000371	0.00891		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
n-Propylbenzene	ND	0.000334	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
sec-Butylbenzene	0.000650	0.000450	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Styrene	ND	0.000295	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
4-Methyl-2-pentanone	ND	0.000752	0.00891		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
tert-Butylbenzene	ND	0.000273	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000290	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (4-6')
Collection Date: 5/1/2015 10:20:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000392	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Tetrachloroethene (PCE)	ND	0.000353	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
trans-1,2-DCE	ND	0.000288	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
trans-1,3-Dichloropropene	ND	0.000233	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,3-Trichlorobenzene	ND	0.000652	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,4-Trichlorobenzene	ND	0.000667	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1,1-Trichloroethane	ND	0.000253	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1,2-Trichloroethane	ND	0.00178	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Trichloroethene (TCE)	ND	0.000354	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Trichlorofluoromethane	ND	0.000360	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,3-Trichloropropane	ND	0.000626	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Vinyl chloride	ND	0.000203	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Surr: 1,2-Dichloroethane-d4	94.8	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
Surr: 4-Bromofluorobenzene	95.1	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
Surr: Dibromofluoromethane	97.2	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
Surr: Toluene-d8	91.5	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.82	3.3		mg/Kg-dr	1	5/6/2015 4:49:21 AM	R25982
Surr: BFB	112	0	67.4-150		%REC	1	5/6/2015 4:49:21 AM	R25982

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (18-20')
Collection Date: 5/1/2015 10:30:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/6/2015 1:36:03 AM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/6/2015 1:36:03 AM	19040
Surr: DNOP	107	0	57.9-140		%REC	1	5/6/2015 1:36:03 AM	19040
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	15	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0035	0.0035	0.040	J	mg/Kg-dr	1	5/14/2015 3:52:59 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	7.6	14		mg/Kg-dr	5	5/13/2015 10:27:12 AM	19080
Arsenic	ND	1.7	14		mg/Kg-dr	5	5/13/2015 10:27:12 AM	19080
Barium	250	0.034	0.12		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Beryllium	1.1	0.0086	0.17		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Chromium	16	0.070	0.35		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Cobalt	7.2	0.044	0.35		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Iron	24000	70	290		mg/Kg-dr	100	5/7/2015 11:50:31 AM	19080
[illegible]	2.2	0.13	0.29		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Manganese	540	0.14	0.23		mg/Kg-dr	2	5/7/2015 3:07:47 PM	19080
Nickel	16	0.15	0.58		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Vanadium	23	0.039	2.9		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Zinc	24	0.75	2.9		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Anthracene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benz(a)anthracene	ND	0.092	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (18-20')
Collection Date: 5/1/2015 10:30:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Dibenzofuran	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
3,3'-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachlorobutadiene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachlorocyclopentadiene	ND	0.081	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Isophorone	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (18-20')
Collection Date: 5/1/2015 10:30:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Phenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Pyridine	ND	0.098	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Surr: 2-Fluorophenol	66.9		26.4-129		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: Phenol-d5	65.1		34.8-118		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: 2,4,6-Tribromophenol	67.9		26.8-128		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: Nitrobenzene-d5	65.4		35.8-124		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: 2-Fluorobiphenyl	72.3		24.5-139		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: 4-Terphenyl-d14	63.1		29.4-129		%REC	1	5/13/2015 6:20:19 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0149	0.000496	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Toluene	0.00962	0.000229	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Ethylbenzene	0.00213	0.000370	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Xylenes, Total	0.00711	0.00131	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000922	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,4-Trimethylbenzene	0.00201	0.000575	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,3,5-Trimethylbenzene	0.00114	0.000386	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000589	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000263	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Naphthalene	ND	0.000719	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1-Methylnaphthalene	ND	0.000864	0.00440		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Methylnaphthalene	ND	0.000859	0.00440		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Acetone	0.00158	0.00137	0.0110	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Bromobenzene	ND	0.000612	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (18-20')
Collection Date: 5/1/2015 10:30:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000297	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Bromoform	ND	0.000570	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Bromomethane	ND	0.00130	0.00330		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Butanone	ND	0.000704	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Carbon tetrachloride	ND	0.000398	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chlorobenzene	ND	0.000223	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chloroethane	ND	0.00220	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chloroform	ND	0.000453	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chloromethane	ND	0.000259	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Chlorotoluene	ND	0.000429	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Carbon disulfide	ND	0.000995	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
4-Chlorotoluene	ND	0.000424	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
cis-1,2-DCE	ND	0.000582	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
cis-1,3-Dichloropropene	ND	0.00220	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000646	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Dibromochloromethane	ND	0.000247	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Dibromomethane	ND	0.00125	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Dichlorobenzene	ND	0.000488	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
[illegible]-Dichlorobenzene	ND	0.000373	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,4-Dichlorobenzene	ND	0.000345	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Dichlorodifluoromethane	ND	0.000898	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1-Dichloroethane	ND	0.000514	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1-Dichloroethene	ND	0.000367	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dichloropropane	ND	0.000470	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,3-Dichloropropane	ND	0.000342	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2,2-Dichloropropane	ND	0.000382	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1-Dichloropropene	ND	0.000403	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Hexachlorobutadiene	ND	0.000444	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Isopropylbenzene	ND	0.000510	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
4-Isopropyltoluene	ND	0.000853	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Methylene chloride	0.000704	0.000543	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
n-Butylbenzene	ND	0.000903	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Hexanone	ND	0.000457	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
n-Propylbenzene	ND	0.000412	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
sec-Butylbenzene	0.000792	0.000555	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Styrene	ND	0.000364	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
4-Methyl-2-pentanone	ND	0.000929	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
tert-Butylbenzene	ND	0.000337	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000358	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505059-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-7 (18-20')
Collection Date: 5/1/2015 10:30:00 AM
Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000484	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Tetrachloroethene (PCE)	ND	0.000436	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
trans-1,2-DCE	ND	0.000355	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
trans-1,3-Dichloropropene	ND	0.000288	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,3-Trichlorobenzene	ND	0.000805	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,4-Trichlorobenzene	ND	0.000824	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1,1-Trichloroethane	ND	0.000313	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1,2-Trichloroethane	ND	0.00220	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Trichloroethene (TCE)	ND	0.000437	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Trichlorofluoromethane	ND	0.000444	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,3-Trichloropropane	ND	0.000772	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Vinyl chloride	ND	0.000251	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Surr: 1,2-Dichloroethane-d4	92.6	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
Surr: Dibromofluoromethane	97.0	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
Surr: Toluene-d8	94.9	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.93	3.7		mg/Kg-dr	1	5/6/2015 5:18:13 AM	R25982
Surr: BFB	107	0	67.4-150		%REC	1	5/6/2015 5:18:13 AM	R25982

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Qualifiers:

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ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762978-01

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505059-001C SWMU 10-7 2-4 FT

Project # :

Collected By :
Collection Date : 05/01/15 10:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.1	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 17:22 Printed: 05/12/15 17:22
L762978-01 (PH) - 8.1 at 20.7c

ESC LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762978-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505059-002C SWMU 10-7 4-6 FT

Project # :

Collected By :
Collection Date : 05/01/15 10:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	70.		mV	2580 B-2011	05/12/15	1
pH	8.6	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 17:22 Printed: 05/12/15 17:22
L762978-02 (PH) - 8.6 at 20.8c

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Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762978-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505059-003C SWMU 10-7 18-20 FT

Project # :

Collected By :
Collection Date : 05/01/15 10:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	60.		mV	2580 B-2011	05/12/15	1
pH	8.7	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/12/15 17:22 Printed: 05/12/15 17:22
L762978-03 (PH) - 8.7 at 20.7c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762978

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG787747	05/12/15 05:36
Cyanide	< .25	mg/kg			WG787856	05/12/15 12:46

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L763354-01	WG787747
Cyanide	mg/kg	0.0	0.0	0.0	20	L763578-02	WG787856
Cyanide	mg/kg	0.0	0.0	0.0	20	L763853-01	WG787856
ORP	mV	73.0	70.0	4.20	20	L762978-02	WG788141
ORP	mV	22.0	20.0	9.52	20	L763853-01	WG788141

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
ORP	mV	100	100.	100.	90-110	WG787860
Chromium,Hexavalent	mg/kg	59.8	52.0	87.0	80-120	WG787747
Cyanide	mg/kg	101	108.	107.	50-150	WG787856
ORP	mV	100	109.	109.	90-110	WG788141

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Chromium,Hexavalent	mg/kg	52.2	52.0	87.0	80-120	0.384	20	WG787747
Cyanide	mg/kg	112.	108.	111.	50-150	3.64	20	WG787856
ORP	mV	110.	109.	110.	90-110	0.913	20	WG788141

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762978

May 12, 2015

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.9	0.0	20	100.	75-125	L763354-01	WG787747
Cyanide	mg/kg	3.27	0.0	3.33	98.0	80-120	L763578-01	WG787856

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.5	20.9	102.	75-125	1.93	20	L763354-01	WG787747
Cyanide	mg/kg	3.18	3.27	95.5	80-120	2.79	20	L763578-01	WG787856

Batch number /Run number / Sample number cross reference

WG787168: R3035796: L762978-01 02 03
WG787860: R3036066: L762978-01
WG787747: R3036267: L762978-01 02 03
WG787856: R3036409: L762978-01 02 03
WG788141: R3036493: L762978-02 03

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19040**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.4	57.9	140			

Sample ID **LCS-19040**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19040**	RunNo: **25952**
Prep Date: **5/4/2015**	Analysis Date: **5/5/2015**	SeqNo: **769702** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19107**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771797** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0107	0.00200	0.01000	0	107	70	130			
Toluene	0.00998	0.00200	0.01000	0	99.8	70	130			
Chlorobenzene	0.00897	0.00200	0.01000	0	89.7	70	130			
1,1-Dichloroethene	0.0114	0.00200	0.01000	0	114	70	130			
Trichloroethene (TCE)	0.0102	0.00200	0.01000	0	102	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0253		0.02500		101	70	130			
Surr: 4-Bromofluorobenzene	0.0237		0.02500		94.8	70	130			
Surr: Dibromofluoromethane	0.0251		0.02500		100	70	130			
Surr: Toluene-d8	0.0253		0.02500		101	70	130			

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000810	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**	
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**	
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**	
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**	
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0256		0.02500		102	70	130			
Surr: 4-Bromofluorobenzene	0.0245		0.02500		97.9	70	130			
Surr: Dibromofluoromethane	0.0258		0.02500		103	70	130			
Surr: Toluene-d8	0.0232		0.02500		92.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**	
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butylbenzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19157**	RunNo: **26173**	
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776628**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2 niline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19157**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19157**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Hal

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19227**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**
Client ID:	**PBS**	Batch ID:	**19227**	RunNo:	**26201**
Prep Date:	**5/14/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**777418** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-19227**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**
Client ID:	**LCSS**	Batch ID:	**19227**	RunNo:	**26201**
Prep Date:	**5/14/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**777419** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	100	80	120			

Sam

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
Qualif	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19080** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **19080** RunNo: **26050**
Prep Date: **5/6/2015** Analysis Date: **5/7/2015** SeqNo: **772227** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	0.13	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	0.74	2.5								J

Sample ID **LCS-19080** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **19080** RunNo: **26050**
Prep Date: **5/6/2015** Analysis Date: **5/7/2015** SeqNo: **772228** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	103	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	27	0.15	25.00	0	107	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	99.2	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	99.4	80	120			
Silver	5.4	0.25	5.000	0	107	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505059**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771006** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	470		500.0		94.7	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R25982**	RunNo: **25982**
Prep Date:	Analysis Date: **5/5/2015**	SeqNo: **771007** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505059** RcptNo: 1

Received by/date: AT 05/01/15

Logged By: **Lindsay Mangin** **5/1/2015 1:48:00 PM**

Completed By: **Lindsay Mangin** **5/2/2015 10:11:48 AM**

Reviewed By: AG 05/04/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☑ No ☐ Not Present ☐
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: Standard ☒ Level 4 (Full Validation)
Accreditation: NELAP ☐ Other
EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505059	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
1.15	1010	SOIL	SWMU 10-7 (2-4')	JARS-2	NEAT	-001			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-001										✓					
	↓	↓	↓	VIALS-2	SOBI	-001										✓					
	1020	SOIL	SWMU 10-7 (4-6')	JARS-2	NEAT	-002			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-002										✓					
	↓	↓	↓	VIALS-2	SOBI	-002										✓					
	1030	SOIL	SWMU 10-7 (18-20')	JARS-2	NEAT	-003			✓							✓	✓	✓			
	↓	↓	↓	VIALS-2	MeOH	-003										✓					
↓	↓	↓	↓	VIALS-2	SOBI	-003										✓					

Date	Time	Relinquished by	Received by	Date	Time
1.15	1113	[signature]	[signature]	5/1/15	11:15
1.15	13:48	[signature]	[signature]	05/01/15	1348

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505218

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/5/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 17, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505218**
Date: **10/12/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8270:
Sample "SWMU 10-5-GW" had two low spike surrogate recoveries out of the 6 spiked surrogates. The sample matrix spike (MS) and matirx spike duplicate (MSD) also had the same low surrogate recoveries (the recoveries for the MSD were all acceptable, but still low for 2 of the 6). These low surrgoate recoveries are attributed to the sample matrix.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505218-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-5-GW
Collection Date: 5/4/2015 9:10:00 AM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	3.1	0.91	1.0		mg/L	1	5/8/2015 1:27:13 PM	19094
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/8/2015 1:27:13 PM	19094
Surr: DNOP	115	0	76.5-150		%REC	1	5/8/2015 1:27:13 PM	19094
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.21	0.012	0.050		mg/L	1	5/6/2015 5:40:49 PM	R26016
Surr: BFB	174	0	80-120	S	%REC	1	5/6/2015 5:40:49 PM	R26016
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/6/2015 2:46:14 PM	R26034
Chloride	2800	67	250		mg/L	500	5/7/2015 6:13:17 PM	R26054
Sulfate	310	2.3	10		mg/L	20	5/6/2015 2:58:38 PM	R26034
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.32	0.00095	0.0020		mg/L	1	5/6/2015 6:34:09 PM	R26030
Beryllium	0.00042	0.00031	0.0020	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:34:09 PM	R26030
Chromium	0.0039	0.0018	0.0060	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Cobalt	0.0035	0.0013	0.0060	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
	0.011	0.0073	0.020	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Manganese	0.27	0.00027	0.0020	*	mg/L	1	5/6/2015 6:34:09 PM	R26030
Nickel	0.0028	0.0021	0.010	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:34:09 PM	R26030
Vanadium	0.0020	0.0015	0.050	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Zinc	0.038	0.0028	0.010		mg/L	1	5/6/2015 6:34:09 PM	R26030
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	0.57	0.00095	0.0020		mg/L	1	5/11/2015 5:53:07 PM	19113
Beryllium	0.0011	0.00031	0.0020	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Cadmium	ND	0.00097	0.0020		mg/L	1	5/11/2015 5:53:07 PM	19113
Chromium	0.0051	0.0022	0.0060	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Cobalt	0.0056	0.0013	0.0060	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Iron	5.7	0.073	0.20	*	mg/L	10	5/12/2015 1:51:10 PM	19113
Manganese	0.69	0.0015	0.0020	*	mg/L	1	5/11/2015 5:53:07 PM	19113
Nickel	0.0044	0.0023	0.010	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Silver	ND	0.0021	0.0050		mg/L	1	5/11/2015 5:53:07 PM	19113
Vanadium	0.013	0.0015	0.050	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Zinc	0.034	0.0036	0.010		mg/L	1	5/11/2015 5:53:07 PM	19113
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.00071	0.0050		mg/L	5	5/19/2015 2:02:16 PM	R26294
Arsenic	0.012	0.0032	0.050	J	mg/L	50	5/19/2015 1:57:20 PM	R26294

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505218-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-5-GW
Collection Date: 5/4/2015 9:10:00 AM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	ND	0.00013	0.0050		mg/L	5	5/19/2015 2:02:16 PM	R26294
Selenium	0.036	0.0097	0.050	J	mg/L	50	5/19/2015 1:57:20 PM	R26294
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	0.00080	0.00022	0.0010	J	mg/L	1	5/8/2015 1:59:29 PM	19113
Arsenic	ND	0.015	0.050		mg/L	50	5/15/2015 12:23:43 PM	19113
Lead	0.0064	0.000069	0.0010		mg/L	1	5/8/2015 1:59:29 PM	19113
Selenium	0.036	0.0097	0.050	J	mg/L	50	5/15/2015 12:23:43 PM	19113
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/14/2015 10:16:51 AM	19207
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Acenaphthylene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Aniline	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Anthracene	ND	1.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Azobenzene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
ızo(a)pyrene	ND	2.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzoic acid	ND	1.0	20		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzyl alcohol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Carbazole	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Chloroaniline	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Chlorophenol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Chrysene	ND	2.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505218-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-5-GW
Collection Date: 5/4/2015 9:10:00 AM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Diethyl phthalate	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Fluoranthene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Fluorene	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
xachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
xachloroethane	ND	1.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Isophorone	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Methylphenol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Naphthalene	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Nitroaniline	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
3-Nitroaniline	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Nitroaniline	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Nitrobenzene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Nitrophenol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Nitrophenol	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Pentachlorophenol	ND	1.1	20		µg/L	1	5/13/2015 11:20:07 AM	19150
Phenanthrene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Phenol	ND	1.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Pyrene	ND	2.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505218-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-5-GW
Collection Date: 5/4/2015 9:10:00 AM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Surr: 2-Fluorophenol	3.97	0	14.9-111	S	%REC	1	5/13/2015 11:20:07 AM	19150
Surr: Phenol-d5	13.2	0	11.3-108		%REC	1	5/13/2015 11:20:07 AM	19150
Surr: 2,4,6-Tribromophenol	4.22	0	15.7-154	S	%REC	1	5/13/2015 11:20:07 AM	19150
Surr: Nitrobenzene-d5	82.1	0	47.8-106		%REC	1	5/13/2015 11:20:07 AM	19150
Surr: 2-Fluorobiphenyl	90.2	0	21.3-123		%REC	1	5/13/2015 11:20:07 AM	19150
Surr: 4-Terphenyl-d14	69.7	0	14.3-135		%REC	1	5/13/2015 11:20:07 AM	19150
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	27	0.065	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Toluene	2.7	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Ethylbenzene	1.6	0.10	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,4-Trimethylbenzene	3.7	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,3,5-Trimethylbenzene	3.9	0.12	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
·Dichloroethane (EDC)	0.32	0.18	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
ı,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1-Methylnaphthalene	3.1	0.54	4.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Methylnaphthalene	3.8	0.59	4.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromoform	ND	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505218-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-5-GW
Collection Date: 5/4/2015 9:10:00 AM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1-Dichloroethene	0.12	0.099	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Isopropylbenzene	1.2	0.15	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
4-Isopropyltoluene	0.92	0.19	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
4-Methyl-2-pentanone	0.61	0.26	10	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
·thylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
ɔutylbenzene	0.40	0.25	3.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
n-Propylbenzene	0.64	0.16	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
sec-Butylbenzene	0.60	0.23	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Xylenes, Total	13	0.28	1.5		µg/L	1	5/12/2015 5:14:59 PM	R26144
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505218-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-5-GW
Collection Date: 5/4/2015 9:10:00 AM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	97.0	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144
Surr: Toluene-d8	102	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505218-002
Matrix: TRIP BLANK
Client Sample ID: TRIP BLANK
Collection Date:
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/6/2015 7:08:28 PM	R26016
Surr: BFB	86.2	0	80-120		%REC	1	5/6/2015 7:08:28 PM	R26016
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Toluene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
moform	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505218-002
Matrix: TRIP BLANK
Client Sample ID: TRIP BLANK
Collection Date:
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
'rachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
..ns-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/12/2015 5:42:27 PM	R26144
Surr: 1,2-Dichloroethane-d4	98.6	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144
Surr: Dibromofluoromethane	98.4	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144
Surr: Toluene-d8	101	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC LAB SCIENCES
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Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763563-01

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505218-001H SWMU 10-5 GW

Project # :

Collected By :
Collection Date : 05/04/15 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.013	0.0050	mg/l	4500CN E-2011	05/12/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/12/15 15:12 Printed: 05/12/15 15:13

ESC
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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763563-02

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505218-001I SWMU 10-5 GW

Project # :

Collected By :
Collection Date : 05/04/15 09:10

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/12/15 15:12 Printed: 05/12/15 15:13

ESC
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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L763563

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19
Cyanide	< .005	mg/l			WG788140	05/12/15 13:30

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013
Cyanide	mg/l	0.0	0.0	0.0	20	L763748-02	WG788140
Cyanide	mg/l	0.0	0.0	0.0	20	L763536-08	WG788140

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013
Cyanide	mg/l	.1	0.101	101.	90-110	WG788140

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013
Cyanide	mg/l	0.0963	0.101	96.0	90-110	4.76	20	WG788140

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013
Cyanide	mg/l	0.195	0.0	.2	98.0	90-110	L763536-09	WG788140

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
~~Hexavalent Chromium~~	~~mg/l~~	~~0.0564~~	~~0.0566~~	~~113.*~~	~~90-110~~	~~0.354~~	~~20~~	~~L763173-02~~	~~WG788013~~
Cyanide	mg/l	0.198	0.195	99.0	90-110	1.53	20	L763536-09	WG788140

Batch number /Run number / Sample number cross reference

WG788013: R3036316: L763563-02
WG788140: R3036440: L763563-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	0.00038	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Sample ID **MB-19113**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **19113**	RunNo: **26109**
Prep Date: **5/7/2015**	Analysis Date: **5/11/2015**	SeqNo: **774475** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19113	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals
Client ID:	PBW	Batch ID:	19113	RunNo:	26109
Prep Date:	5/7/2015	Analysis Date:	5/11/2015	SeqNo:	774475 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-19113	SampType:	LCS	TestCode:	EPA Method 200.7: Metals
Client ID:	LCSW	Batch ID:	19113	RunNo:	26109
Prep Date:	5/7/2015	Analysis Date:	5/11/2015	SeqNo:	774476 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.0	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.50	0.0060	0.5000	0	100	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.5	85	115			
Iron	0.48	0.020	0.5000	0	95.4	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	98.3	85	115			
Silver	0.11	0.0050	0.1000	0	107	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19113** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **19113** RunNo: **26070**
Prep Date: **5/7/2015** Analysis Date: **5/8/2015** SeqNo: **773047** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Date: Analysis Date: **5/19/2015** SeqNo: **781113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781115** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**		SampType: **MBLK**			TestCode: **EPA 200.8: Metals**						
Client ID: **PBW**		Batch ID: **R26294**			RunNo: **26294**						
Prep Date:		Analysis Date: **5/19/2015**			SeqNo: **781116**			Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Antimony	ND	0.0010									
Arsenic	ND	0.0010									
Lead	ND	0.00050									
Selenium	ND	0.0010									

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Date: Analysis Date: **5/19/2015** SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19207**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19207**	RunNo:	**26178**
Prep Date:	**5/13/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**776900** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19207**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19207**	RunNo:	**26178**
Prep Date:	**5/13/2015**	Analysis Date:	**5/14/2015**	SeqNo:	**776901** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26034**	RunNo: **26034**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771822** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26034**	RunNo: **26034**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771823** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.8	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26054**	RunNo: **26054**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772545** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

ple ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26054**	RunNo: **26054**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772546** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19094	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range
Client ID:	PBW	Batch ID:	19094	RunNo:	26059
Prep Date:	5/6/2015	Analysis Date:	5/8/2015	SeqNo:	772816 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		110	76.5	150			

Sample ID	LCS-19094	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range
Client ID:	LCSW	Batch ID:	19094	RunNo:	26059
Prep Date:	5/6/2015	Analysis Date:	5/8/2015	SeqNo:	772817 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	109	60.1	156			
Surr: DNOP	0.63		0.5000		125	76.5	150			

Sample ID	1505218-001CMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range
Client ID:	SWMU 10-5-GW	Batch ID:	19094	RunNo:	26059
Prep Date:	5/6/2015	Analysis Date:	5/8/2015	SeqNo:	772956 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible] Range Organics (DRO)	7.9	1.0	5.000	3.064	95.8	75.9	164			
[illegible]: DNOP	0.63		0.5000		127	76.5	150			

Sample ID	1505218-001CMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range
Client ID:	SWMU 10-5-GW	Batch ID:	19094	RunNo:	26059
Prep Date:	5/6/2015	Analysis Date:	5/8/2015	SeqNo:	772957 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	8.8	1.0	5.000	3.064	114	75.9	164	10.9	22.1	
Surr: DNOP	0.66		0.5000		132	76.5	150	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26016**	RunNo: **26016**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **775972** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.5	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26016**	RunNo: **26016**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **775973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.9	80	120			
Surr: BFB	21		20.00		104	80	120			

Sample ID **1505218-001BMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-5-GW**	Batch ID: **R26016**	RunNo: **26016**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **775975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.63	0.050	0.5000	0.2116	83.3	51	131			
Surr: BFB	34		20.00		168	80	120			S

Sample ID **1505218-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-5-GW**	Batch ID: **R26016**	RunNo: **26016**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **775976** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.63	0.050	0.5000	0.2116	83.2	51	131	0.0319	20	
Surr: BFB	34		20.00		172	80	120	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**	
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775654**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
[illegible] disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	0.32	3.0								J
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775654** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.6		10.00		96.5	70	130			

Sample ID **100nglcs,200ngT2lc**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775656** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	20	1.0	20.00	0	98.8	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ngIcs,200ngT2Ic	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES
Client ID:	LCSW	Batch ID:	R26144	RunNo:	26144
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775656 Units: µg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	24	1.0	20.00	0	120	75.6	144			
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.2	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID	b6	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES
Client ID:	PBW	Batch ID:	R26144	RunNo:	26144
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775719 Units: µg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
[illegible] Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	0.40	10								J
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	0.21	2.0								J
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **b6**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
yl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **b6**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	10		10.00		99.7	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775720** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	116	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	99.2	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	9.9		10.00		99.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Hal

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19150**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
4-Nitro enzyl phthalate	ND	10								
4-Nitro	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

* Qual.	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
*	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19150**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	74	10	100.0	0	74.2	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	80.3	58.1	103			
2-Chlorophenol	150	10	200.0	0	72.9	49.5	96.8			
1,4-Dichlorobenzene	72	10	100.0	0	71.6	40.4	89.4			
2,4-Dinitrotoluene	58	10	100.0	0	58.3	38.6	91.3			
N-Nitrosodi-n-propylamine	78	10	100.0	0	77.9	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	68.0	26.4	108			
Pentachlorophenol	130	20	200.0	0	64.7	36.5	86.6			
Phenol	150	10	200.0	0	75.0	29.3	108			
Pyrene	65	10	100.0	0	65.2	45.7	100			
1,2,4-Trichlorobenzene	89	10	100.0	0	88.8	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		78.0	14.9	111			
Surr: Phenol-d5	170		200.0		84.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.8	15.7	154			
Surr: Nitrobenzene-d5	87		100.0		86.8	47.8	106			
Surr: 2-Fluorobiphenyl	84		100.0		84.2	21.3	123			
Surr: 4-Terphenyl-d14	57		100.0		57.2	14.3	135			

Sample ID **1505218-001Dms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-5-GW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776623** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	100	10	100.0	0	99.6	46.4	121			
4-Chloro-3-methylphenol	100	10	200.0	0	52.1	45.3	135			
2-Chlorophenol	28	10	200.0	0	13.8	28.7	129			S
1,4-Dichlorobenzene	91	10	100.0	0	91.4	42.6	104			
2,4-Dinitrotoluene	80	10	100.0	3.540	76.9	28.9	126			
N-Nitrosodi-n-propylamine	98	10	100.0	0	97.7	49.2	117			
4-Nitrophenol	ND	10	200.0	0	0	18.1	97.2			S
Pentachlorophenol	11	20	200.0	7.960	1.72	24.8	127			JS
Phenol	37	10	200.0	0	18.3	17.9	93.6			
Pyrene	73	10	100.0	0	73.5	29.6	142			
1,2,4-Trichlorobenzene	100	10	100.0	0	101	39.5	109			
Surr: 2-Fluorophenol	15		200.0		7.30	14.9	111			S
Surr: Phenol-d5	41		200.0		20.4	11.3	108			
Surr: 2,4,6-Tribromophenol	15		200.0		7.62	15.7	154			S
Surr: Nitrobenzene-d5	100		100.0		100	47.8	106			
Surr: 2-Fluorobiphenyl	100		100.0		104	21.3	123			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505218**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **1505218-001Dms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-5-GW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776623** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	73		100.0		72.8	14.3	135			

Sample ID **1505218-001Dmsd**	SampType: **MSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-5-GW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776624** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	96	10	100.0	0	96.2	46.4	121	3.55	31.3	
4-Chloro-3-methylphenol	160	10	200.0	0	77.6	45.3	135	39.4	29	R
2-Chlorophenol	80	10	200.0	0	40.1	28.7	129	97.8	28.4	R
1,4-Dichlorobenzene	100	10	100.0	0	100	42.6	104	8.98	28.2	
2,4-Dinitrotoluene	77	10	100.0	3.540	73.4	28.9	126	4.40	22.9	
N-Nitrosodi-n-propylamine	110	10	100.0	0	107	49.2	117	8.65	28.8	
4-Nitrophenol	ND	10	200.0	0	0	18.1	97.2	0	41.5	S
Pentachlorophenol	12	20	200.0	7.960	2.08	24.8	127	6.12	45.1	JS
Phenol	98	10	200.0	0	48.9	17.9	93.6	91.0	33.9	R
Pyrene	74	10	100.0	0	74.1	29.6	142	0.813	33.6	
Trichlorobenzene	99	10	100.0	0	99.2	39.5	109	2.03	28.2	
Surr: 2-Fluorophenol	40		200.0		20.0	14.9	111	0	0	
Surr: Phenol-d5	100		200.0		51.4	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	33		200.0		16.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	95		100.0		94.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	98		100.0		98.1	21.3	123	0	0	
Surr: 4-Terphenyl-d14	73		100.0		72.9	14.3	135	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505218 RcptNo: 1

Received by/date: AG 05/05/15

Logged By: Ashley Gallegos 5/5/2015 2:55:00 PM

Completed By: Ashley Gallegos 5/6/2015 9:05:02 AM

Reviewed By: 05/06/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☑ No VOA Vials ☐ CS 05/06/15 Sample -002B (2 of 2) has a bubble.
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐ (Note discrepancies on chain of custody)
    # of preserved bottles checked for pH: 2 1 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted? no
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐ Checked by CS
    (If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: ____ Date ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

17. Additional remarks: For 300 analysis, poured off from a 1L Amber unpreserved into a 125 ml bottle. CS 05/06/15

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain of-Custody Record

Client: WESTERN REFINING SW, INC. GALLUP REFINERY

Mailing Address: 92 GIANT CROSSING RD GALLUP, NM 87301

Phone #: 505-722-0231

email or Fax#: CHERYL.JOHNSON@WNR.COM

QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)

Accreditation: ☐ NELAP ☐ Other

☒ EDD (Type) EXCEL

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: SWMU 10

Project #:

Project Manager: CHERYL JOHNSON

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505218	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISS)	GEN CHEM	CR 6		Air Bubbles (Y or N)
.4.15	0910	WATER	SWMU 10-5-GW	40 ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	NEAT												✓		✓			
				250 ML AMBER-1	NEAT					✓												
				100 ML PLASTIC-1	HNO_3													✓				
				500 ML PLASTIC-1	HNO_3													✓				
				500 ML PLASTIC-1	NaOH								✓									
				50 ML PLASTIC-1	NH_4SO_4															✓		
↓	—	↓	TRIP BLANK	40 ML VOA-4	HCL	-002										✓						

Date	Time	Relinquished by	Received by	Date	Time
.5.15	0745	[signature]	[signature]	5/5/15	1200
5-15	1455	[signature]	Amy Gallegos	05/05/14	1455

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505222

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/5/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 17, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505222-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB05
Collection Date: 5/4/2015 5:00:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/8/2015 2:30:55 PM	19094
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/8/2015 2:30:55 PM	19094
Surr: DNOP	119	0	76.5-150		%REC	1	5/8/2015 2:30:55 PM	19094
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/6/2015 10:32:54 PM	R26016
Surr: BFB	86.2	0	80-120		%REC	1	5/6/2015 10:32:54 PM	R26016
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/6/2015 3:35:51 PM	R26034
Chloride	ND	0.13	0.50		mg/L	1	5/6/2015 3:35:51 PM	R26034
Sulfate	ND	0.11	0.50		mg/L	1	5/6/2015 3:35:51 PM	R26034
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/6/2015 6:45:39 PM	R26030
Beryllium	ND	0.00031	0.0020		mg/L	1	5/6/2015 6:45:39 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:45:39 PM	R26030
Chromium	ND	0.0018	0.0060		mg/L	1	5/6/2015 6:45:39 PM	R26030
Cobalt	ND	0.0013	0.0060		mg/L	1	5/6/2015 6:45:39 PM	R26030
	0.011	0.0073	0.020	J	mg/L	1	5/6/2015 6:45:39 PM	R26030
Manganese	0.00063	0.00027	0.0020	J	mg/L	1	5/6/2015 6:45:39 PM	R26030
Nickel	ND	0.0021	0.010		mg/L	1	5/6/2015 6:45:39 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:45:39 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/6/2015 6:45:39 PM	R26030
Zinc	0.031	0.0028	0.010		mg/L	1	5/6/2015 6:45:39 PM	R26030
EPA METHOD 200.7: METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Beryllium	ND	0.00031	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Cadmium	ND	0.00097	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Chromium	ND	0.0022	0.0060		mg/L	1	5/7/2015 3:12:04 PM	R26052
Cobalt	ND	0.0013	0.0060		mg/L	1	5/7/2015 3:12:04 PM	R26052
Iron	ND	0.0073	0.020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Manganese	ND	0.0015	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Nickel	ND	0.0023	0.010		mg/L	1	5/7/2015 3:12:04 PM	R26052
Silver	ND	0.0021	0.0050		mg/L	1	5/11/2015 5:54:55 PM	R26109
Vanadium	ND	0.0015	0.050		mg/L	1	5/7/2015 3:12:04 PM	R26052
Zinc	ND	0.0036	0.010		mg/L	1	5/7/2015 3:12:04 PM	R26052
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00027	0.00014	0.0010	J	mg/L	1	5/19/2015 2:07:12 PM	R26294
Arsenic	ND	0.000065	0.0010		mg/L	1	5/19/2015 2:07:12 PM	R26294

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505222-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB05
Collection Date: 5/4/2015 5:00:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Lead	0.000031	0.000026	0.0010	J	mg/L	1	5/19/2015 2:07:12 PM	R26294
Selenium	ND	0.00019	0.0010		mg/L	1	5/19/2015 2:07:12 PM	R26294
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.00043	0.0010		mg/L	1	5/19/2015 1:22:44 PM	R26294
Arsenic	ND	0.00029	0.0010		mg/L	1	5/19/2015 1:22:44 PM	R26294
Lead	ND	0.000047	0.00050		mg/L	1	5/19/2015 1:22:44 PM	R26294
Selenium	ND	0.00019	0.0010		mg/L	1	5/19/2015 1:22:44 PM	R26294
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/14/2015 10:18:41 AM	19207
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Acenaphthylene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Aniline	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Anthracene	ND	1.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Azobenzene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
zo(a)pyrene	ND	2.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzoic acid	ND	1.0	20		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzyl alcohol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Carbazole	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Chloroaniline	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Chlorophenol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Chrysene	ND	2.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/13/2015 12:43:26 PM	19150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505222-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB05
Collection Date: 5/4/2015 5:00:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Dibenzofuran	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Diethyl phthalate	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Fluoranthene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Fluorene	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
xachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
xachloroethane	ND	1.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Isophorone	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Methylphenol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Naphthalene	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Nitroaniline	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
3-Nitroaniline	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Nitroaniline	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Nitrobenzene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Nitrophenol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Nitrophenol	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Pentachlorophenol	ND	1.1	20		µg/L	1	5/13/2015 12:43:26 PM	19150
Phenanthrene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Phenol	ND	1.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Pyrene	ND	2.3	10		µg/L	1	5/13/2015 12:43:26 PM	19150

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505222-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB05
Collection Date: 5/4/2015 5:00:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Pyridine	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Surr: 2-Fluorophenol	85.1	0	14.9-111		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: Phenol-d5	76.0	0	11.3-108		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: 2,4,6-Tribromophenol	100	0	15.7-154		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: Nitrobenzene-d5	99.3	0	47.8-106		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: 2-Fluorobiphenyl	102	0	21.3-123		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: 4-Terphenyl-d14	75.6	0	14.3-135		%REC	1	5/13/2015 12:43:26 PM	19150
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Toluene	0.34	0.11	1.0	J	µg/L	1	5/12/2015 6:09:52 PM	R26144
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1.3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromoform	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505222-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB05
Collection Date: 5/4/2015 5:00:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
thylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
butylbenzene	ND	0.25	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/12/2015 6:09:52 PM	R26144
Surr: 1,2-Dichloroethane-d4	95.6	0	70-130		%REC	1	5/12/2015 6:09:52 PM	R26144
Surr: 4-Bromofluorobenzene	100	0	70-130		%REC	1	5/12/2015 6:09:52 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505222-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB05
Collection Date: 5/4/2015 5:00:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Surr: Dibromofluoromethane	99.1	0	70-130		%REC	1	5/12/2015 6:09:52 PM	R26144
Surr: Toluene-d8	104	0	70-130		%REC	1	5/12/2015 6:09:52 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505222-002 **Matrix:** TRIP BLANK

Client Sample ID: TRIP BLANK
Collection Date:
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/6/2015 11:02:06 PM	R26016
Surr: BFB	92.9	0	80-120		%REC	1	5/6/2015 11:02:06 PM	R26016
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.065	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Toluene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
moform	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505222-002
Matrix: TRIP BLANK
Client Sample ID: TRIP BLANK
Collection Date:
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
cis-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/12/2015 6:37:27 PM	R26144
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144
Surr: Dibromofluoromethane	99.4	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144
Surr: Toluene-d8	104	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763564-01

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505222-001H SWMU 10 EB05

Project # :

Collected By :
Collection Date : 05/04/15 17:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.014	0.0050	mg/l	4500CN E-2011	05/12/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/12/15 15:12 Printed: 05/12/15 15:13

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Fax (615) 758-5859

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Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763564-02

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505222-001I SWMU 10 EB05

Project # :

Collected By :
Collection Date : 05/04/15 17:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/12/15 15:12 Printed: 05/12/15 15:13

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L763564

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19
Cyanide	< .005	mg/l			WG788140	05/12/15 13:30

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013
Cyanide	mg/l	0.0	0.0	0.0	20	L763748-02	WG788140
Cyanide	mg/l	0.0	0.0	0.0	20	L763536-08	WG788140

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013
Cyanide	mg/l	.1	0.101	101.	90-110	WG788140

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013
Cyanide	mg/l	0.0963	0.101	96.0	90-110	4.76	20	WG788140

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013
Cyanide	mg/l	0.195	0.0	.2	98.0	90-110	L763536-09	WG788140

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013
Cyanide	mg/l	0.198	0.195	99.0	90-110	1.53	20	L763536-09	WG788140

Batch number /Run number / Sample number cross reference

WG788013: R3036316: L763564-02
WG788140: R3036440: L763564-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771646** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	0.00038	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771647** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible]	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772430** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772431** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.50	0.0060	0.5000	0	99.4	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	99.0	85	115			
Nickel	0.49	0.010	0.5000	0	98.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Sample ID **1505222-001GMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **SWMU 10 EB05**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772437** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	70	130			
Beryllium	0.51	0.0020	0.5000	0	103	70	130			
Cadmium	0.53	0.0020	0.5000	0	107	70	130			
Chromium	0.50	0.0060	0.5000	0	100	70	130			
Cobalt	0.51	0.0060	0.5000	0	101	70	130			
Iron	0.53	0.020	0.5000	0	105	70	130			
Manganese	0.50	0.0020	0.5000	0	99.1	70	130			
Nickel	0.49	0.010	0.5000	0	98.6	70	130			
Vanadium	0.50	0.050	0.5000	0	99.8	70	130			
Zinc	0.50	0.010	0.5000	0	99.9	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	1505222-001GMSD	SampType:	MSD	TestCode:	EPA Method 200.7: Metals
Client ID:	SWMU 10 EB05	Batch ID:	R26052	RunNo:	26052
Prep Date:		Analysis Date:	5/7/2015	SeqNo:	772441 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	98.6	70	130	1.22	20	
Beryllium	0.52	0.0020	0.5000	0	103	70	130	0.311	20	
Cadmium	0.54	0.0020	0.5000	0	107	70	130	0.471	20	
Chromium	0.51	0.0060	0.5000	0	101	70	130	0.848	20	
Cobalt	0.51	0.0060	0.5000	0	101	70	130	0.0811	20	
Iron	0.52	0.020	0.5000	0	104	70	130	1.35	20	
Manganese	0.50	0.0020	0.5000	0	101	70	130	1.40	20	
Nickel	0.50	0.010	0.5000	0	99.6	70	130	0.993	20	
Vanadium	0.50	0.050	0.5000	0	101	70	130	0.777	20	
Zinc	0.50	0.010	0.5000	0	100	70	130	0.549	20	

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals
Client ID:	PBW	Batch ID:	R26109	RunNo:	26109
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774477 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Metals
Client ID:	LCSW	Batch ID:	R26109	RunNo:	26109
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774478 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	103	85	115			

Sample ID	1505222-001GMS	SampType:	MS	TestCode:	EPA Method 200.7: Metals
Client ID:	SWMU 10 EB05	Batch ID:	R26109	RunNo:	26109
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774890 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	101	70	130			

Sample ID	1505222-001GMSD	SampType:	MSD	TestCode:	EPA Method 200.7: Metals
Client ID:	SWMU 10 EB05	Batch ID:	R26109	RunNo:	26109
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774891 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	103	70	130	1.98	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771648** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26030**	RunNo: **26030**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771649** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible]	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772432** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772432** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26052**	RunNo: **26052**
Prep Date:	Analysis Date: **5/7/2015**	SeqNo: **772433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.3	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
	0.49	0.010	0.5000	0	97.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.2	85	115			
Zinc	0.49	0.010	0.5000	0	97.3	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26109**	RunNo: **26109**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774479** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26109**	RunNo: **26109**
Prep Date:	Analysis Date: **5/11/2015**	SeqNo: **774480** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	105	85	115			

Qualifiers:

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- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Date: Analysis Date: **5/19/2015** SeqNo: **781115** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

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  Sample Diluted Due to Matrix
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- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Date: Analysis Date: **5/19/2015** SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19207	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury						
Client ID:	PBW	Batch ID:	19207	RunNo:	26178						
Prep Date:	5/13/2015	Analysis Date:	5/14/2015	SeqNo:	776900	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.00020								

Sample ID	LCS-19207	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury						
Client ID:	LCSW	Batch ID:	19207	RunNo:	26178						
Prep Date:	5/13/2015	Analysis Date:	5/14/2015	SeqNo:	776901	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**		
Client ID: **PBW**	Batch ID: **R26034**	RunNo: **26034**		
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771822**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**		
Client ID: **LCSW**	Batch ID: **R26034**	RunNo: **26034**		
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **771823**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.8	90	110			
Chloride	5.0	0.50	5.000	0	99.7	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19094**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19094**	RunNo: **26059**
Prep Date: **5/6/2015**	Analysis Date: **5/8/2015**	SeqNo: **772816** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		110	76.5	150			

Sample ID **LCS-19094**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19094**	RunNo: **26059**
Prep Date: **5/6/2015**	Analysis Date: **5/8/2015**	SeqNo: **772817** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	109	60.1	156			
Surr: DNOP	0.63		0.5000		125	76.5	150			

Qualifiers:

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- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
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- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26016**	RunNo: **26016**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **775972** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.5	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26016**	RunNo: **26016**
Prep Date:	Analysis Date: **5/6/2015**	SeqNo: **775973** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.9	80	120			
Surr: BFB	21		20.00		104	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775654** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	0.32	3.0								J
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775654** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.6		10.00		96.5	70	130			

Sample ID **100nglcs,200ngT2lc**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775656** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	20	1.0	20.00	0	98.8	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ngIcs,200ngT2Ic	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES
Client ID:	LCSW	Batch ID:	R26144	RunNo:	26144
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775656 Units: µg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	24	1.0	20.00	0	120	75.6	144			
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.2	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID	b6	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES
Client ID:	PBW	Batch ID:	R26144	RunNo:	26144
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775719 Units: µg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
[illegible] Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	0.40	10								J
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	0.21	2.0								J
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **b6**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
yl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **b6**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/12/2015**	SeqNo: **775719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	10		10.00		99.7	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26144**	RunNo: **26144**
Prep Date:	Analysis Date: **5/13/2015**	SeqNo: **775720** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	21	1.0	20.00	0	107	70	130			
Chlorobenzene	21	1.0	20.00	0	105	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	116	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	99.2	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
: Toluene-d8	9.9		10.00		99.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19150**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776620** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
' enzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19150**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19150**	RunNo: **26173**	
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776620**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
' ıalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	130		200.0		67.3	14.9	111			
Surr: Phenol-d5	150		200.0		73.2	11.3	108			
Surr: 2,4,6-Tribromophenol	150		200.0		74.7	15.7	154			
Surr: Nitrobenzene-d5	77		100.0		77.0	47.8	106			
Surr: 2-Fluorobiphenyl	81		100.0		80.8	21.3	123			
Surr: 4-Terphenyl-d14	54		100.0		54.3	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505222**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19150**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19150**	RunNo: **26173**
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**	SeqNo: **776621** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	74	10	100.0	0	74.2	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	80.3	58.1	103			
2-Chlorophenol	150	10	200.0	0	72.9	49.5	96.8			
1,4-Dichlorobenzene	72	10	100.0	0	71.6	40.4	89.4			
2,4-Dinitrotoluene	58	10	100.0	0	58.3	38.6	91.3			
N-Nitrosodi-n-propylamine	78	10	100.0	0	77.9	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	68.0	26.4	108			
Pentachlorophenol	130	20	200.0	0	64.7	36.5	86.6			
Phenol	150	10	200.0	0	75.0	29.3	108			
Pyrene	65	10	100.0	0	65.2	45.7	100			
1,2,4-Trichlorobenzene	89	10	100.0	0	88.8	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		78.0	14.9	111			
Surr: Phenol-d5	170		200.0		84.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.8	15.7	154			
Surr: Nitrobenzene-d5	87		100.0		86.8	47.8	106			
Surr: 2-Fluorobiphenyl	84		100.0		84.2	21.3	123			
Surr: 4-Terphenyl-d14	57		100.0		57.2	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505222 RcptNo: 1

Received by/date: AG 05/05/15

Logged By: Ashley Gallegos 5/5/2015 2:55:00 PM AG

Completed By: Ashley Gallegos 5/6/2015 9:35:38 AM AG

Reviewed By: 05/06/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
    # of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)
    Adjusted? no
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)
    Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks: For 1300 analysis, Poured off into a 125ml bottle from the 1L Amber (unpreserved). -CS 05/06/15

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
Email or Fax# CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505222	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR 6		Air Bubbles (Y or N)
4.15	1700	WATER	SWMU 10 EB05	40ML VOA-6	HCL	-001			✓							✓						
				1 LITER AMBER-2	—												✓		✓			
				250 ML AMBER-1	—					✓												
				100 ML PLASTIC-1	HNO_3													✓				
				500 ML PLASTIC-1	HNO_3													✓				
				500 ML PLASTIC-1	NaOH								✓									
				50 ML PLASTIC-1	NH_4ZSO_4															✓		

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.15	0745	[signature]	[signature]	5/5/15	12:00
5/15	1455	[signature]	[signature]	05/05/15	1455

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Tuesday, August 4, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0231

RE: SWMU 10 Order No: 1505223

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 6 sample(s) on 5/5/2015 for the analyses presented in the following report.

This report is an amended report that has updated results for hexavalent chromium.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505223**
Date: **6/29/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding Hexavalent Chromium:
The original results for hexavalent chromium for the samples below did not match with the total chromium results.
SWMU 10-2 (0-2')
SWMU 10-2 (2-4')
SWMU 10 DUP03
All three of the above samples were reanalyzed and reported in this report. The reanalysis shows that the samples are nondetect for hexavalent chromium. It is our opinion that the initial analysis of the three samples above was incorrect either due to matrix interferences or laboratory error. This opinion is confirmed by both the nondetect results of the reanalyzed samples and the initial total chromium results.

ANALYTICAL SUMMARY REPORT

July 30, 2015

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B15070689

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 3 samples for Hall Environmental on 7/8/2015 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B15070689-001	1505223-003C, SWMU 10-2 (0-2 Feet)	05/04/15 15:50	07/08/15	Soil	Chromium, Hexavalent Water Extraction for Hex Chromium
B15070689-002	1505223-004C, SWMU 10-2 (2-4 Feet)	05/04/15 16:00	07/08/15	Soil	Same As Above
B15070689-003	1505223-005C, SWMU 10 DUP03	05/04/15 0:00	07/08/15	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Corporate Quality Assurance Officer

Digitally signed by
Andy Valkenburg
Date: 2015.07.30 17:54:46 -06:00

CLIENT: Hall Environmental
Project: Not Indicated
Work Order: B15070689

Report Date: 07/30/15

CASE NARRATIVE

Requested Cyanide analysis cancelled per Andy Freeman (Hall Environmental Inc) on 7/28/2015.

Level IV reporting was requested. Included with the analysis reports are instrument data reports for all analysis associated with the instrument calibration, QC sample analysis, and sample analysis. Copies of the detailed laboratory records for the analyses are sorted by method, instrument, and then analysis time. All analytical data is within method QA/QC specifications except as noted on analyses and/or QC summary reports, or in this narrative. The detailed report format with the instrument data identifies which QC batch ID and sequence QC are associated with each analysis result for a sample.

Inclusion of the raw data will be found with the attached data files. The results of this Analytical Report relate only to the items submitted for analysis. Only the raw data associated with parameters listed on this report should be validated.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1505223-003C, SWMU 10-2 (0-2 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B15070689-001
Collection Date: 05/04/15 15:50
DateReceived: 07/08/15
Report Date: 07/30/15

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1		SW7196A	07/09/15 15:30 / ma	07/09/15 13:27	Water Extr	SPEC_150709B	4	91220

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1505223-004C, SWMU 10-2 (2-4 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B15070689-002
Collection Date: 05/04/15 16:00
DateReceived: 07/08/15
Report Date: 07/30/15

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1		SW7196A	07/09/15 15:30 / ma	07/09/15 13:27	Water Extr	SPEC_150709B	8	91220

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1505223-005C, SWMU 10 DUP03
Project: Not Indicated
Matrix: Soil

Lab ID: B15070689-003
Collection Date: 05/04/15
DateReceived: 07/08/15
Report Date: 07/30/15

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1		SW7196A	07/09/15 15:30 / ma	07/09/15 13:27	Water Extr	SPEC_150709B	9	91220

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: Hall Environmental
Work Order: B15070689
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 91220

Date: *30-Jul-15*

Run ID :Run Order: **SPEC_150709B: 3** SampType: **Method Blank** Lab ID: **MB-91220** Method: **SW7196A**
Analysis Date: **07/09/15 15:30** Units: **mg/kg** **Prep Info:** Prep Date: **7/9/2015** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	ND	0.1									

Associated samples: **B15070689-001A, B15070689-002A, B15070689-003A**

Run ID :Run Order: **SPEC_150709B: 5** SampType: **Sample Matrix Spike** Lab ID: **B15070689-001AMS** Method: **SW7196A**
Analysis Date: **07/09/15 15:30** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.945	0.00010	1	0	94	70	130				

Associated samples: **B15070689-001A, B15070689-002A, B15070689-003A**

Run ID :Run Order: **SPEC_150709B: 6** SampType: **Sample Matrix Spike Duplicate** Lab ID: **B15070689-001AMSD** Method: **SW7196A**
Analysis Date: **07/09/15 15:30** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.971	0.00010	1	0	97	70	130	0.9446	2.8	20	

Associated samples: **B15070689-001A, B15070689-002A, B15070689-003A**

Run ID :Run Order: **SPEC_150709B: 7** SampType: **Sample Duplicate** Lab ID: **B15070689-001ADUP** Method: **SW7196A**
Analysis Date: **07/09/15 15:30** Units: **mg/kg** **Prep Info:** Prep Date: **7/9/2015** Prep Method: **Water Extraction**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.0920	0.00010		0				0		30	

Associated samples: **B15070689-001A, B15070689-002A, B15070689-003A**

Run ID :Run Order: **SPEC_150709B: 12** SampType: **Laboratory Control Sample** Lab ID: **LCS-91220** Method: **SW7196A**
Analysis Date: **07/09/15 15:30** Units: **mg/kg** **Prep Info:** Prep Date: Prep Method:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1.06	0.010	1	0	106	85	115				

Associated samples: **B15070689-001A, B15070689-002A, B15070689-003A**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount

Work Order Receipt Checklist

Hall Environmental

B15070689

Login completed by: Randa Nees
Reviewed by: BL2000\raschim
Reviewed Date: 7/8/2015

Date Received: 7/8/2015
Received by: kl
Carrier name: Return-UPS NDA N/C

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☐	No ☑	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	3.2°C Blue Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

The samples were received past holding time for Hexavalet Chromium, continued with analysis per Chain of Custody instructions.

Cyanide requested on the Chain of Custody but is not needed per email from Andy Freeman on 07/28/15. Per Wynn Pippin, Project Manager, do not report Cyanide but charge for analysis.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTO. . RECORD

PAGE: 1 OF: 1

Hall Environmental Analys oratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975
FAX: 505-345-4107
Website: www.hallenvironmental.com

SUB CONTRATOR: Bil-Energy
COMPANY: Energy Laboratories
PHONE: (800) 735-4489
FAX: (406) 252-6069
ADDRESS: 1120 South 27th Street
ACCOUNT #:
EMAIL:
CITY, STATE, ZIP: Billings, MT 59107

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1505223-003C	SWMU 10-2 (0-2')	8OZGU	MeOH (S oil)	5/4/2015 3:50:00 PM	1	TOTAL CYANIDE, CR6.LEVEL 4. B1507061689-001
2	1505223-004C	SWMU 10-2 (2-4')	8OZGU	MeOH (S oil)	5/4/2015 4:00:00 PM	1	TOTAL CYANIDE, CR6.LEVEL 4. 002
3	1505223-005C	SWMU 10 DUP03	8OZGU	MeOH (S oil)	5/4/2015	1	TOTAL CYANIDE, CR6.LEVEL 4. 003

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all co

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[signature]	7/7/2015	3:29 PM	KYLE LARSEN [signature]	8 JUL 2015	9:15am
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 3.2 °C Attempt to Cool? BLUE ICE
Comments: SHIP: UPS NDA RTN SEAL: C

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 12, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505223

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 6 sample(s) on 5/5/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 19, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-001 **Matrix:** MEOH (SOIL)

Client Sample ID: SWMU 10-6 (2-4')
Collection Date: 5/4/2015 3:20:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.6	10		mg/Kg-dr	1	5/8/2015 6:05:15 PM	19116
Motor Oil Range Organics (MRO)	ND	51	51		mg/Kg-dr	1	5/8/2015 6:05:15 PM	19116
Surr: DNOP	100	0	57.9-140		%REC	1	5/8/2015 6:05:15 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.95	3.2		mg/Kg-dr	1	5/7/2015 10:31:17 AM	19091
Surr: BFB	93.0	0	80-120		%REC	1	5/7/2015 10:31:17 AM	19091
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	9.6	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	0.0055	0.0030	0.035	J	mg/Kg-dr	1	5/8/2015 4:25:42 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Arsenic	1.8	0.32	2.8	J	mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Barium	1000	0.16	0.55		mg/Kg-dr	5	5/9/2015 10:09:58 AM	19082
Beryllium	1.1	0.0082	0.17		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Chromium	9.3	0.067	0.33		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Cobalt	4.8	0.042	0.33		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Iron	15000	67	280		mg/Kg-dr	100	5/8/2015 1:23:07 PM	19082
Lead	2.5	0.12	0.28		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Manganese	410	0.13	0.22		mg/Kg-dr	2	5/8/2015 3:11:10 PM	19082
Nickel	8.2	0.14	0.55		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Silver	ND	0.033	0.28		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Vanadium	21	0.037	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Zinc	14	0.71	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-001

Client Sample ID: SWMU 10-6 (2-4')
Collection Date: 5/4/2015 3:20:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
3,3'-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-001
Matrix: MEOH (SOIL)
Client Sample ID: SWMU 10-6 (2-4')
Collection Date: 5/4/2015 3:20:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
N-Nitrosodiphenylamine	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Surr: 2-Fluorophenol	69.4		26.4-129		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: Phenol-d5	71.4		34.8-118		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: 2,4,6-Tribromophenol	72.8		26.8-128		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: Nitrobenzene-d5	68.8		35.8-124		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: 2-Fluorobiphenyl	70.7		24.5-139		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: 4-Terphenyl-d14	66.2		29.4-129		%REC	1	5/13/2015 6:48:16 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00387	0.000467	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Toluene	0.00275	0.000216	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Ethylbenzene	0.000767	0.000349	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Xylenes, Total	0.00220	0.00124	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000869	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,4-Trimethylbenzene	0.00106	0.000542	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,3,5-Trimethylbenzene	0.000477	0.000364	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000556	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000248	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Naphthalene	ND	0.000678	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1-Methylnaphthalene	ND	0.000814	0.00415		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-001
Client Sample ID: SWMU 10-6 (2-4')
Collection Date: 5/4/2015 3:20:00 PM
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000810	0.00415		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Acetone	0.00854	0.00129	0.0104	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromobenzene	ND	0.000577	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromodichloromethane	ND	0.000280	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromoform	ND	0.000537	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromomethane	ND	0.00123	0.00311		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2-Butanone	0.00176	0.000664	0.0104	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Carbon tetrachloride	ND	0.000375	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chlorobenzene	ND	0.000210	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chloroform	ND	0.000427	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chloromethane	ND	0.000244	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2-Chlorotoluene	ND	0.000405	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Carbon disulfide	ND	0.000938	0.0104		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
4-Chlorotoluene	ND	0.000399	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
cis-1,2-DCE	ND	0.000548	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
cis-1,3-Dichloropropene	ND	0.00207	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
[illegible]-Dibromo-3-chloropropane	ND	0.000609	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
[illegible]romochloromethane	ND	0.000233	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Dibromomethane	ND	0.00118	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dichlorobenzene	ND	0.000460	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,3-Dichlorobenzene	ND	0.000351	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,4-Dichlorobenzene	ND	0.000325	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Dichlorodifluoromethane	ND	0.000847	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1-Dichloroethane	ND	0.000484	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1-Dichloroethene	ND	0.000346	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dichloropropane	ND	0.000443	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,3-Dichloropropane	ND	0.000323	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2,2-Dichloropropane	ND	0.000360	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1-Dichloropropene	ND	0.000380	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Hexachlorobutadiene	ND	0.000418	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Isopropylbenzene	ND	0.000481	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
4-Isopropyltoluene	ND	0.000805	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Methylene chloride	0.000695	0.000512	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
n-Butylbenzene	ND	0.000851	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2-Hexanone	0.000726	0.000431	0.0104	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
n-Propylbenzene	ND	0.000388	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
sec-Butylbenzene	0.000695	0.000524	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Styrene	ND	0.000344	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-001

Client Sample ID: SWMU 10-6 (2-4')
Collection Date: 5/4/2015 3:20:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000876	0.0104		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
tert-Butylbenzene	ND	0.000318	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000337	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000456	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Tetrachloroethene (PCE)	ND	0.000411	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
trans-1,2-DCE	ND	0.000335	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
trans-1,3-Dichloropropene	ND	0.000271	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,3-Trichlorobenzene	ND	0.000759	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,4-Trichlorobenzene	ND	0.000777	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,1-Trichloroethane	ND	0.000295	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,2-Trichloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Trichloroethene (TCE)	ND	0.000412	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Trichlorofluoromethane	ND	0.000419	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,3-Trichloropropane	ND	0.000728	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Vinyl chloride	ND	0.000237	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107
Surr: 4-Bromofluorobenzene	96.6	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107
Surr: Dibromofluoromethane	106	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107
Surr: Toluene-d8	86.5	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-002 **Matrix:** MEOH (SOIL)

Client Sample ID: SWMU 10-6 (10-12')
Collection Date: 5/4/2015 3:30:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.3	9.6		mg/Kg-dr	1	5/8/2015 7:09:05 PM	19116
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/8/2015 7:09:05 PM	19116
Surr: DNOP	104	0	57.9-140		%REC	1	5/8/2015 7:09:05 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.2	4.1		mg/Kg-dr	1	5/7/2015 11:00:01 AM	19091
Surr: BFB	91.5	0	80-120		%REC	1	5/7/2015 11:00:01 AM	19091
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0035	0.039		mg/Kg-dr	1	5/8/2015 4:29:24 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.9	1.6	3.0	J	mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Arsenic	2.1	0.35	3.0	J	mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Barium	550	0.071	0.24		mg/Kg-dr	2	5/8/2015 3:14:46 PM	19082
Beryllium	1.0	0.0088	0.18		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Chromium	14	0.071	0.36		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Cobalt	8.0	0.045	0.36		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Iron	20000	72	300		mg/Kg-dr	100	5/8/2015 1:24:38 PM	19082
Lead	1.6	0.13	0.30		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Manganese	760	0.35	0.59		mg/Kg-dr	5	5/9/2015 10:13:19 AM	19082
Nickel	16	0.15	0.59		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Silver	ND	0.035	0.30		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Vanadium	14	0.040	3.0		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Zinc	23	0.77	3.0		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-002

Client Sample ID: SWMU 10-6 (10-12')
Collection Date: 5/4/2015 3:30:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
3,3'-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dimethylphenol	ND	0.093	0.35		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-002

Client Sample ID: SWMU 10-6 (10-12')
Collection Date: 5/4/2015 3:30:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
[illegible]idine	ND	0.099	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
[illegible],4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Surr: 2-Fluorophenol	82.0		26.4-129		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: Phenol-d5	78.7		34.8-118		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: 2,4,6-Tribromophenol	83.5		26.8-128		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: Nitrobenzene-d5	80.2		35.8-124		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: 2-Fluorobiphenyl	78.9		24.5-139		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: 4-Terphenyl-d14	72.7		29.4-129		%REC	1	5/13/2015 7:16:13 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0226	0.000564	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Toluene	0.0146	0.000260	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Ethylbenzene	0.00350	0.000420	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Xylenes, Total	0.0116	0.00149	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.00105	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,4-Trimethylbenzene	0.00363	0.000654	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,3,5-Trimethylbenzene	0.00220	0.000439	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000670	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000299	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Naphthalene	0.00103	0.000817	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1-Methylnaphthalene	ND	0.000982	0.00500		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-002

Client Sample ID: SWMU 10-6 (10-12')
Collection Date: 5/4/2015 3:30:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000977	0.00500		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Acetone	0.00589	0.00156	0.0125	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromobenzene	ND	0.000696	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromodichloromethane	ND	0.000338	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromoform	ND	0.000648	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromomethane	ND	0.00148	0.00375		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2-Butanone	ND	0.000801	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Carbon tetrachloride	ND	0.000453	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chlorobenzene	ND	0.000254	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chloroethane	ND	0.00250	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chloroform	ND	0.000515	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chloromethane	ND	0.000295	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2-Chlorotoluene	ND	0.000488	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Carbon disulfide	ND	0.00113	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
4-Chlorotoluene	ND	0.000482	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
cis-1,2-DCE	ND	0.000661	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
cis-1,3-Dichloropropene	ND	0.00250	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
ˆ-Dibromo-3-chloropropane	ND	0.000735	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
.romochloromethane	ND	0.000281	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Dibromomethane	ND	0.00142	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dichlorobenzene	ND	0.000555	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,3-Dichlorobenzene	ND	0.000424	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,4-Dichlorobenzene	ND	0.000393	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Dichlorodifluoromethane	ND	0.00102	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1-Dichloroethane	ND	0.000584	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1-Dichloroethene	ND	0.000417	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dichloropropane	ND	0.000534	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,3-Dichloropropane	ND	0.000390	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2,2-Dichloropropane	ND	0.000434	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1-Dichloropropene	ND	0.000458	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Hexachlorobutadiene	ND	0.000505	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Isopropylbenzene	ND	0.000580	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
4-Isopropyltoluene	ND	0.000971	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Methylene chloride	ND	0.000618	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
n-Butylbenzene	ND	0.00103	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2-Hexanone	ND	0.000520	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
n-Propylbenzene	0.000638	0.000468	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
sec-Butylbenzene	0.000925	0.000632	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Styrene	ND	0.000414	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-002

Client Sample ID: SWMU 10-6 (10-12')
Collection Date: 5/4/2015 3:30:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.00106	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
tert-Butylbenzene	ND	0.000383	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000407	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000550	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Tetrachloroethene (PCE)	ND	0.000496	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
trans-1,2-DCE	ND	0.000404	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
trans-1,3-Dichloropropene	ND	0.000327	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,3-Trichlorobenzene	ND	0.000915	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,4-Trichlorobenzene	ND	0.000937	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,1-Trichloroethane	ND	0.000356	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,2-Trichloroethane	ND	0.00250	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Trichloroethene (TCE)	ND	0.000497	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Trichlorofluoromethane	ND	0.000505	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,3-Trichloropropane	ND	0.000878	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Vinyl chloride	ND	0.000286	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Surr: 1,2-Dichloroethane-d4	91.6	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107
Surr: 4-Bromofluorobenzene	94.9	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107
Surr: Dibromofluoromethane	94.1	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107
Surr: Toluene-d8	85.9	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-003 **Matrix:** MEOH (SOIL)

Client Sample ID: SWMU 10-2 (0-2')
Collection Date: 5/4/2015 3:50:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	24	5.4	9.7		mg/Kg-dr	1	5/8/2015 7:30:14 PM	19116
Motor Oil Range Organics (MRO)	58	49	49		mg/Kg-dr	1	5/8/2015 7:30:14 PM	19116
Surr: DNOP	106	0	57.9-140		%REC	1	5/8/2015 7:30:14 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.99	3.3		mg/Kg-dr	1	5/7/2015 11:28:43 AM	19091
Surr: BFB	91.6	0	80-120		%REC	1	5/7/2015 11:28:43 AM	19091
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	0.014	0.0034	0.039	J	mg/Kg-dr	1	5/8/2015 4:40:22 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Arsenic	1.8	0.34	2.9	J	mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Barium	390	0.070	0.23		mg/Kg-dr	2	5/8/2015 3:18:28 PM	19082
Beryllium	0.91	0.0086	0.17		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Chromium	11	0.070	0.35		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Cobalt	4.6	0.044	0.35		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Iron	15000	70	290		mg/Kg-dr	100	5/8/2015 1:40:49 PM	19082
Lead	3.1	0.13	0.29		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Manganese	700	0.34	0.58		mg/Kg-dr	5	5/9/2015 10:20:59 AM	19082
Nickel	9.2	0.15	0.58		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Vanadium	21	0.039	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Zinc	18	0.75	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-003

Client Sample ID: SWMU 10-2 (0-2')
Collection Date: 5/4/2015 3:50:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
3,3'-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dimethylphenol	ND	0.093	0.36		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-003

Client Sample ID: SWMU 10-2 (0-2')
Collection Date: 5/4/2015 3:50:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
[illegible]idine	ND	0.099	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
[illegible],4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Surr: 2-Fluorophenol	77.9		26.4-129		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: Phenol-d5	78.0		34.8-118		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: 2,4,6-Tribromophenol	86.8		26.8-128		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: Nitrobenzene-d5	78.9		35.8-124		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: 2-Fluorobiphenyl	79.4		24.5-139		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: 4-Terphenyl-d14	67.8		29.4-129		%REC	1	5/13/2015 7:44:14 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00171	0.000450	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Toluene	0.00191	0.000208	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Ethylbenzene	0.000618	0.000335	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Xylenes, Total	0.00206	0.00119	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000837	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,4-Trimethylbenzene	0.000938	0.000521	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,3,5-Trimethylbenzene	ND	0.000350	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000535	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000239	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Naphthalene	ND	0.000652	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1-Methylnaphthalene	ND	0.000784	0.00399		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-003

Client Sample ID: SWMU 10-2 (0-2')
Collection Date: 5/4/2015 3:50:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000780	0.00399		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Acetone	0.0222	0.00125	0.00998		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromobenzene	ND	0.000555	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromodichloromethane	ND	0.000270	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromoform	ND	0.000517	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromomethane	ND	0.00118	0.00299		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2-Butanone	0.00380	0.000639	0.00998	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Carbon tetrachloride	ND	0.000361	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chlorobenzene	ND	0.000202	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chloroethane	ND	0.00200	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chloroform	ND	0.000411	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chloromethane	ND	0.000235	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2-Chlorotoluene	ND	0.000389	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Carbon disulfide	ND	0.000903	0.00998		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
4-Chlorotoluene	ND	0.000384	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
cis-1,2-DCE	ND	0.000528	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
cis-1,3-Dichloropropene	ND	0.00200	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
` Dibromo-3-chloropropane	ND	0.000586	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
,omochloromethane	ND	0.000224	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Dibromomethane	ND	0.00113	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dichlorobenzene	ND	0.000443	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,3-Dichlorobenzene	ND	0.000338	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,4-Dichlorobenzene	ND	0.000313	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Dichlorodifluoromethane	ND	0.000815	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1-Dichloroethane	ND	0.000466	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1-Dichloroethene	ND	0.000333	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dichloropropane	ND	0.000426	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,3-Dichloropropane	ND	0.000311	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2,2-Dichloropropane	ND	0.000347	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1-Dichloropropene	ND	0.000365	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Hexachlorobutadiene	ND	0.000403	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Isopropylbenzene	ND	0.000463	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
4-Isopropyltoluene	ND	0.000774	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Methylene chloride	0.000748	0.000493	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
n-Butylbenzene	ND	0.000819	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2-Hexanone	0.000788	0.000415	0.00998	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
n-Propylbenzene	ND	0.000374	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
sec-Butylbenzene	0.000658	0.000504	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Styrene	ND	0.000331	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-003

Client Sample ID: SWMU 10-2 (0-2')
Collection Date: 5/4/2015 3:50:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000843	0.00998		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
tert-Butylbenzene	ND	0.000306	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000325	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000439	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Tetrachloroethene (PCE)	ND	0.000395	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
trans-1,2-DCE	ND	0.000322	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
trans-1,3-Dichloropropene	ND	0.000261	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,3-Trichlorobenzene	ND	0.000730	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,4-Trichlorobenzene	ND	0.000748	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,1-Trichloroethane	ND	0.000284	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,2-Trichloroethane	ND	0.00200	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Trichloroethene (TCE)	ND	0.000396	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Trichlorofluoromethane	ND	0.000403	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,3-Trichloropropane	ND	0.000701	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Vinyl chloride	ND	0.000228	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Surr: 1,2-Dichloroethane-d4	92.6	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107
Surr: 4-Bromofluorobenzene	99.0	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107
Surr: Dibromofluoromethane	96.0	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107
Surr: Toluene-d8	96.6	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-004 **Matrix:** MEOH (SOIL)

Client Sample ID: SWMU 10-2 (2-4')
Collection Date: 5/4/2015 4:00:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/8/2015 8:34:07 PM	19116
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/8/2015 8:34:07 PM	19116
Surr: DNOP	101	0	57.9-140		%REC	1	5/8/2015 8:34:07 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.97	3.2		mg/Kg-dr	1	5/7/2015 11:57:30 AM	19091
Surr: BFB	92.4	0	80-120		%REC	1	5/7/2015 11:57:30 AM	19091
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	13	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	0.0062	0.0034	0.039	J	mg/Kg-dr	1	5/8/2015 4:36:41 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.7	1.5	2.9	J	mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Arsenic	1.7	0.34	2.9	J	mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Barium	810	0.17	0.57		mg/Kg-dr	5	5/9/2015 10:22:14 AM	19082
Beryllium	0.98	0.0085	0.17		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Chromium	11	0.069	0.34		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Cobalt	5.1	0.043	0.34		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Iron	17000	69	290		mg/Kg-dr	100	5/8/2015 1:42:19 PM	19082
Lead	2.3	0.12	0.29		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Manganese	360	0.13	0.23		mg/Kg-dr	2	5/8/2015 3:26:54 PM	19082
Nickel	8.9	0.15	0.57		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Vanadium	22	0.038	2.9		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Zinc	17	0.74	2.9		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benz(a)anthracene	ND	0.090	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-004

Client Sample ID: SWMU 10-2 (2-4')
Collection Date: 5/4/2015 4:00:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.065	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
3,3'-Dichlorobenzidine	ND	0.088	0.29		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dimethylphenol	ND	0.090	0.35		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.062	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-004

Client Sample ID: SWMU 10-2 (2-4')
Collection Date: 5/4/2015 4:00:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Nitrophenol	ND	0.099	0.29		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
[illegible]ridine	ND	0.096	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
[illegible],4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Surr: 2-Fluorophenol	61.5		26.4-129		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: Phenol-d5	63.1		34.8-118		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: 2,4,6-Tribromophenol	65.7		26.8-128		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: Nitrobenzene-d5	57.0		35.8-124		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: 2-Fluorobiphenyl	64.3		24.5-139		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: 4-Terphenyl-d14	63.1		29.4-129		%REC	1	5/13/2015 8:12:17 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00203	0.000383	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Toluene	0.00155	0.000177	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Ethylbenzene	0.000468	0.000286	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Xylenes, Total	0.00143	0.00101	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Methyl tert-butyl ether (MTBE)	0.00283	0.000713	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,4-Trimethylbenzene	0.000663	0.000444	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,3,5-Trimethylbenzene	ND	0.000298	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000456	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000203	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Naphthalene	ND	0.000556	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1-Methylnaphthalene	ND	0.000668	0.00340		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-004 **Matrix:** MEOH (SOIL)

Client Sample ID: SWMU 10-2 (2-4')
Collection Date: 5/4/2015 4:00:00 PM
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000665	0.00340		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Acetone	0.0199	0.00106	0.00850		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromobenzene	ND	0.000473	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromodichloromethane	ND	0.000230	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromoform	ND	0.000441	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromomethane	ND	0.00101	0.00255		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2-Butanone	0.00283	0.000545	0.00850	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Carbon tetrachloride	ND	0.000308	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chlorobenzene	ND	0.000172	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chloroethane	ND	0.00170	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chloroform	ND	0.000350	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chloromethane	ND	0.000200	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2-Chlorotoluene	ND	0.000332	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Carbon disulfide	ND	0.000770	0.00850		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
4-Chlorotoluene	ND	0.000328	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
cis-1,2-DCE	ND	0.000450	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
cis-1,3-Dichloropropene	ND	0.00170	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
[illegible]-Dibromo-3-chloropropane	ND	0.000500	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
[illegible]romochloromethane	ND	0.000191	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Dibromomethane	ND	0.000965	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dichlorobenzene	ND	0.000377	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,3-Dichlorobenzene	ND	0.000288	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,4-Dichlorobenzene	ND	0.000267	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Dichlorodifluoromethane	ND	0.000694	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1-Dichloroethane	ND	0.000397	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1-Dichloroethene	ND	0.000284	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dichloropropane	ND	0.000363	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,3-Dichloropropane	ND	0.000265	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2,2-Dichloropropane	ND	0.000295	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1-Dichloropropene	ND	0.000311	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Hexachlorobutadiene	ND	0.000343	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Isopropylbenzene	ND	0.000395	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
4-Isopropyltoluene	ND	0.000660	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Methylene chloride	ND	0.000420	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
n-Butylbenzene	ND	0.000698	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2-Hexanone	0.000672	0.000354	0.00850	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
n-Propylbenzene	ND	0.000318	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
sec-Butylbenzene	ND	0.000430	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Styrene	ND	0.000282	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-004

Client Sample ID: SWMU 10-2 (2-4')
Collection Date: 5/4/2015 4:00:00 PM
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000718	0.00850		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
tert-Butylbenzene	ND	0.000261	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000277	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000374	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Tetrachloroethene (PCE)	ND	0.000337	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
trans-1,2-DCE	ND	0.000275	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
trans-1,3-Dichloropropene	ND	0.000222	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,3-Trichlorobenzene	ND	0.000622	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,4-Trichlorobenzene	ND	0.000637	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,1-Trichloroethane	ND	0.000242	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,2-Trichloroethane	ND	0.00170	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Trichloroethene (TCE)	ND	0.000338	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Trichlorofluoromethane	ND	0.000344	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,3-Trichloropropane	ND	0.000597	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Vinyl chloride	ND	0.000194	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Surr: 1,2-Dichloroethane-d4	95.0	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107
Surr: Dibromofluoromethane	96.6	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107
Surr: Toluene-d8	87.1	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-005
Matrix: MEOH (SOIL)
Client Sample ID: SWMU 10 DUP03
Collection Date: 5/4/2015
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/8/2015 8:55:21 PM	19116
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/8/2015 8:55:21 PM	19116
Surr: DNOP	112	0	57.9-140		%REC	1	5/8/2015 8:55:21 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.2	3.9		mg/Kg-dr	1	5/7/2015 12:26:14 PM	19091
Surr: BFB	92.3	0	80-120		%REC	1	5/7/2015 12:26:14 PM	19091
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	9.4	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: **JLF**	
Mercury	ND	0.0031	0.036		mg/Kg-dr	1	5/8/2015 4:38:31 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	1.9	1.5	2.8	J	mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Arsenic	2.2	0.32	2.8	J	mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Barium	450	0.066	0.22		mg/Kg-dr	2	5/8/2015 3:30:42 PM	19082
Beryllium	0.95	0.0082	0.17		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
[illegible]dmium	ND	0.031	0.11		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
[illegible]omium	13	0.066	0.33		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Cobalt	7.0	0.042	0.33		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Iron	20000	67	280		mg/Kg-dr	100	5/8/2015 1:43:51 PM	19082
Lead	1.4	0.12	0.28		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Manganese	730	0.32	0.55		mg/Kg-dr	5	5/9/2015 10:23:28 AM	19082
Nickel	13	0.14	0.55		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Silver	ND	0.033	0.28		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Vanadium	17	0.037	2.8		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Zinc	21	0.71	2.8		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP03
Project: SWMU 10
Collection Date: 5/4/2015
Lab ID: 1505223-005
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
3,3'-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-005
Client Sample ID: SWMU 10 DUP03
Collection Date: 5/4/2015
Matrix: MEOH (SOIL)
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
N-Nitrosodiphenylamine	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
[illegible]ridine	ND	0.092	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
[illegible],4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Surr: 2-Fluorophenol	78.7		26.4-129		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: Phenol-d5	75.1		34.8-118		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: 2,4,6-Tribromophenol	74.0		26.8-128		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: Nitrobenzene-d5	72.7		35.8-124		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: 2-Fluorobiphenyl	78.9		24.5-139		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: 4-Terphenyl-d14	65.6		29.4-129		%REC	1	5/13/2015 8:40:20 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0206	0.000524	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Toluene	0.0139	0.000242	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Ethylbenzene	0.00328	0.000391	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Xylenes, Total	0.00984	0.00139	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000975	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,4-Trimethylbenzene	0.00292	0.000608	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,3,5-Trimethylbenzene	0.00172	0.000408	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000623	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000278	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Naphthalene	0.000837	0.000760	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1-Methylnaphthalene	ND	0.000913	0.00465		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-005

Client Sample ID: SWMU 10 DUP03
Collection Date: 5/4/2015
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
2-Methylnaphthalene	ND	0.000909	0.00465		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Acetone	0.00256	0.00145	0.0116	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromobenzene	ND	0.000647	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromodichloromethane	ND	0.000314	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromoform	ND	0.000603	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromomethane	ND	0.00137	0.00349		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2-Butanone	ND	0.000745	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Carbon tetrachloride	ND	0.000421	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chlorobenzene	ND	0.000236	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chloroethane	ND	0.00233	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chloroform	ND	0.000479	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chloromethane	ND	0.000274	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2-Chlorotoluene	ND	0.000454	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Carbon disulfide	ND	0.00105	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
4-Chlorotoluene	ND	0.000448	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
cis-1,2-DCE	ND	0.000615	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
cis-1,3-Dichloropropene	ND	0.00233	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
' ?-Dibromo-3-chloropropane	ND	0.000683	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
romochloromethane	ND	0.000261	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Dibromomethane	ND	0.00132	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dichlorobenzene	ND	0.000516	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,3-Dichlorobenzene	ND	0.000394	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,4-Dichlorobenzene	ND	0.000365	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Dichlorodifluoromethane	ND	0.000949	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1-Dichloroethane	ND	0.000543	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1-Dichloroethene	ND	0.000388	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dichloropropane	ND	0.000497	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,3-Dichloropropane	ND	0.000362	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2,2-Dichloropropane	ND	0.000404	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1-Dichloropropene	ND	0.000426	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Hexachlorobutadiene	ND	0.000469	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Isopropylbenzene	ND	0.000539	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
4-Isopropyltoluene	ND	0.000902	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Methylene chloride	0.000721	0.000575	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
n-Butylbenzene	ND	0.000955	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2-Hexanone	ND	0.000484	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
n-Propylbenzene	0.000477	0.000435	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
sec-Butylbenzene	0.000849	0.000587	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Styrene	ND	0.000385	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-005

Client Sample ID: SWMU 10 DUP03
Collection Date: 5/4/2015
Matrix: MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
4-Methyl-2-pentanone	ND	0.000982	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
tert-Butylbenzene	ND	0.000356	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000378	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000511	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Tetrachloroethene (PCE)	ND	0.000461	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
trans-1,2-DCE	ND	0.000376	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
trans-1,3-Dichloropropene	ND	0.000304	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,3-Trichlorobenzene	ND	0.000851	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,4-Trichlorobenzene	ND	0.000871	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,1-Trichloroethane	ND	0.000331	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,2-Trichloroethane	ND	0.00233	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Trichloroethene (TCE)	ND	0.000462	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Trichlorofluoromethane	ND	0.000470	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,3-Trichloropropane	ND	0.000816	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Vinyl chloride	ND	0.000266	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Surr: 1,2-Dichloroethane-d4	99.4	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107
Surr: 4-Bromofluorobenzene	98.8	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107
Surr: Dibromofluoromethane	103	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107
Surr: Toluene-d8	95.3	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-006
Matrix: MEOH BLAN
Client Sample ID: MEOH BLANK
Collection Date:
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.5	5.0		mg/Kg	1	5/7/2015 1:23:46 PM	19091
Surr: BFB	94.3	0	80-120		%REC	1	5/7/2015 1:23:46 PM	19091
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0074	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Toluene	ND	0.0060	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Ethylbenzene	ND	0.0046	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Methyl tert-butyl ether (MTBE)	ND	0.0071	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,4-Trimethylbenzene	ND	0.0025	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,3,5-Trimethylbenzene	ND	0.0033	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dichloroethane (EDC)	ND	0.020	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dibromoethane (EDB)	ND	0.0040	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Naphthalene	ND	0.012	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1-Methylnaphthalene	ND	0.030	0.20		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Methylnaphthalene	ND	0.033	0.20		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Acetone	0.095	0.037	0.75	J	mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromobenzene	ND	0.0037	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromodichloromethane	ND	0.0041	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
moform	ND	0.0040	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromomethane	0.016	0.0097	0.15	J	mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Butanone	ND	0.032	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Carbon disulfide	ND	0.036	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Carbon tetrachloride	ND	0.0049	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chlorobenzene	ND	0.0038	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chloroethane	ND	0.039	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chloroform	ND	0.0052	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chloromethane	ND	0.0058	0.15		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Chlorotoluene	ND	0.0057	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
4-Chlorotoluene	ND	0.0038	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
cis-1,2-DCE	ND	0.0063	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
cis-1,3-Dichloropropene	ND	0.0035	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dibromo-3-chloropropane	ND	0.0086	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Dibromochloromethane	ND	0.0037	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Dibromomethane	ND	0.0053	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dichlorobenzene	ND	0.0030	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,3-Dichlorobenzene	ND	0.0059	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,4-Dichlorobenzene	ND	0.0062	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Dichlorodifluoromethane	ND	0.013	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1-Dichloroethane	ND	0.020	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1-Dichloroethene	ND	0.0034	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505223-006
Client Sample ID: MEOH BLANK
Collection Date:
Matrix: MEOH BLAN
Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,2-Dichloropropane	ND	0.0028	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,3-Dichloropropane	ND	0.0069	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2,2-Dichloropropane	ND	0.0073	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1-Dichloropropene	ND	0.0074	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Hexachlorobutadiene	ND	0.0069	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Hexanone	ND	0.012	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Isopropylbenzene	ND	0.0042	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
4-Isopropyltoluene	ND	0.0036	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
4-Methyl-2-pentanone	ND	0.0087	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Methylene chloride	ND	0.020	0.15		mg/Kg	1	5/8/2015 11:52:26 PM	19119
n-Butylbenzene	ND	0.0043	0.15		mg/Kg	1	5/8/2015 11:52:26 PM	19119
n-Propylbenzene	ND	0.0037	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
sec-Butylbenzene	ND	0.0071	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Styrene	ND	0.0092	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
tert-Butylbenzene	ND	0.0057	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,1,2-Tetrachloroethane	ND	0.0041	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,2,2-Tetrachloroethane	ND	0.0061	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Tetrachloroethene (PCE)	ND	0.0043	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
cis-1,2-DCE	ND	0.0032	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
trans-1,3-Dichloropropene	ND	0.0090	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,3-Trichlorobenzene	ND	0.011	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,4-Trichlorobenzene	ND	0.0092	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,1-Trichloroethane	ND	0.0076	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,2-Trichloroethane	ND	0.0060	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Trichloroethene (TCE)	ND	0.0049	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Trichlorofluoromethane	ND	0.015	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,3-Trichloropropane	ND	0.0084	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Vinyl chloride	ND	0.020	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Xylenes, Total	ND	0.014	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Surr: Dibromofluoromethane	99.5		70-130		%REC	1	5/8/2015 11:52:26 PM	19119
Surr: 1,2-Dichloroethane-d4	87.3		70-130		%REC	1	5/8/2015 11:52:26 PM	19119
Surr: Toluene-d8	92.4		70-130		%REC	1	5/8/2015 11:52:26 PM	19119
Surr: 4-Bromofluorobenzene	96.9		70-130		%REC	1	5/8/2015 11:52:26 PM	19119

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763578-01

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505223-001C SWMU 10-6 2-4FT

Project # :

Collected By :
Collection Date : 05/04/15 15:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	40.		mV	2580 B-2011	05/12/15	1
pH	7.6	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-01 (PH) - 7.6 a 20.4c

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763578-02

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505223-002C SWMU 10-6 10-12FT

Project # :

Collected By :
Collection Date : 05/04/15 15:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	-10.		mV	2580 B-2011	05/12/15	1
pH	8.6	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-02 (PH) - 8.6 at 20.4c

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
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Albuquerque, NM 87109

ESC Sample # : L763578-03

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505223-003C SWMU 10-2 0-2FT

Project # :

Collected By :
Collection Date : 05/04/15 15:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	270	20.	mg/kg	3060A/7196A	05/12/15	10
ORP	-20.		mV	2580 B-2011	05/12/15	1
pH	7.8	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-03 (PH) - 7.8 at 20.4c

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763578-04

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505223-004C SWMU 10-2 2-4FT

Project # :

Collected By :
Collection Date : 05/04/15 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	260	20.	mg/kg	3060A/7196A	05/12/15	10
ORP	-10.		mV	2580 B-2011	05/12/15	1
pH	8.2	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-04 (PH) - 8.2 at 20.1c

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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763578-05

Date Received : May 07, 2015
Description :

Site ID :

Sample ID : 1505223-005C SWMU 10 DUP03

Project # :

Collected By :
Collection Date : 05/04/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium,Hexavalent	260	20.	mg/kg	3060A/7196A	05/12/15	10
ORP	-10.		mV	2580 B-2011	05/12/15	1
pH	8.4	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-05 (PH) - 8.4 at 20.5c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L763578

May 12, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG787747	05/12/15 05:36
Cyanide	< .25	mg/kg			WG787856	05/12/15 12:46

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	6.60	6.70	0.749	1	L763514-01	WG787615
pH	su	7.40	7.40	0.542	1	L763739-08	WG787615
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L763354-01	WG787747
Cyanide	mg/kg	0.0	0.0	0.0	20	L763578-02	WG787856
Cyanide	mg/kg	0.0	0.0	0.0	20	L763853-01	WG787856
ORP	mV	22.0	20.0	9.52	20	L763853-01	WG788141

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.80	99.5	98.3-101.7	WG787615
Chromium,Hexavalent	mg/kg	59.8	52.0	87.0	80-120	WG787747
anide	mg/kg	101	108.	107.	50-150	WG787856
ORP	mV	100	109.	109.	90-110	WG788141

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787615
Chromium,Hexavalent	mg/kg	52.2	52.0	87.0	80-120	0.384	20	WG787747
Cyanide	mg/kg	112.	108.	111.	50-150	3.64	20	WG787856
ORP	mV	110.	109.	110.	90-110	0.913	20	WG788141

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.9	0.0	20	100.	75-125	L763354-01	WG787747
Cyanide	mg/kg	3.27	0.0	3.33	98.0	80-120	L763578-01	WG787856

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

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Quality Assurance Report
Level II

L763578

May 12, 2015

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	20.5	20.9	102.	75-125	1.93	20	L763354-01	WG787747
Cyanide	mg/kg	3.18	3.27	95.5	80-120	2.79	20	L763578-01	WG787856

Batch number /Run number / Sample number cross reference

WG787615: R3035880: L763578-01 02 03 04 05
WG787747: R3036267: L763578-01 02 03 04 05
WG787856: R3036409: L763578-01 02 03 04 05
WG788141: R3036493: L763578-01 02 03 04 05

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19116	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics
Client ID:	PBS	Batch ID:	19116	RunNo:	26059
Prep Date:	5/7/2015	Analysis Date:	5/8/2015	SeqNo:	773936	Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	57.9	140			

Sample ID	LCS-19116	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics
Client ID:	LCSS	Batch ID:	19116	RunNo:	26059
Prep Date:	5/7/2015	Analysis Date:	5/8/2015	SeqNo:	773937	Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.7	67.8	130			
Surr: DNOP	6.1		5.000		123	57.9	140			

Sample ID	1505223-001BMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics
Client ID:	SWMU 10-6 (2-4')	Batch ID:	19116	RunNo:	26059
Prep Date:	5/7/2015	Analysis Date:	5/8/2015	SeqNo:	773939	Units: mg/Kg-dry

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.30	0	92.2	42.3	146			
Surr: DNOP	5.9		5.030		118	57.9	140			

Sample ID	1505223-001BMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics
Client ID:	SWMU 10-6 (2-4')	Batch ID:	19116	RunNo:	26059
Prep Date:	5/7/2015	Analysis Date:	5/8/2015	SeqNo:	773940	Units: mg/Kg-dry

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.35	0	88.3	42.3	146	4.24	28.9	
Surr: DNOP	5.7		5.035		113	57.9	140	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19091	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	PBS	Batch ID:	19091	RunNo:	26045						
Prep Date:	5/6/2015	Analysis Date:	5/7/2015	SeqNo:	772072	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		ND	5.0								
Surr: BFB		920		1000		92.4	80	120			

Sample ID	LCS-19091	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	LCSS	Batch ID:	19091	RunNo:	26045						
Prep Date:	5/6/2015	Analysis Date:	5/7/2015	SeqNo:	772073	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		26	5.0	25.00	0	103	64	130			
Surr: BFB		1000		1000		100	80	120			

Sample ID	MB-19119	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	PBS	Batch ID:	19119	RunNo:	26061						
Prep Date:	5/7/2015	Analysis Date:	5/8/2015	SeqNo:	773617	Units:	%REC				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		900		1000		89.8	80	120			

Sample ID	LCS-19119	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range						
Client ID:	LCSS	Batch ID:	19119	RunNo:	26061						
Prep Date:	5/7/2015	Analysis Date:	5/8/2015	SeqNo:	773618	Units:	%REC				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		990		1000		98.9	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19119**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**	
Client ID: **PBS**	Batch ID: **19119**	RunNo: **26064**	
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **772830**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0072	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.041	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.011	0.15								J
2-Butanone	0.036	0.50								J
C[illegible] disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.0068	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19119**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **19119**	RunNo: **26064**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **772830** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	0.0070	0.15								J
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
[illegible]richlorobenzene	0.011	0.10								J
1,2,4-Trichlorobenzene	0.013	0.050								J
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	0.0067	0.050								J
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.55		0.5000		111	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.43		0.5000		85.5	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.4	70	130			

Sample ID **lcs-19119**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **19119**	RunNo: **26064**
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**	SeqNo: **772831** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	102	70	130			
Toluene	0.90	0.050	1.000	0	89.9	70	130			
Chlorobenzene	1.0	0.050	1.000	0	103	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19119**	SampType: **LCS**		TestCode: **EPA Method 8260B: Volatiles**		
Client ID: **LCSS**	Batch ID: **19119**		RunNo: **26064**		
Prep Date: **5/7/2015**	Analysis Date: **5/8/2015**		SeqNo: **772831**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	124	60.6	134			
Trichloroethene (TCE)	0.91	0.050	1.000	0	91.3	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		109	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.5	70	130			
Surr: Toluene-d8	0.44		0.5000		87.4	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19107**	SampType: **LCS**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771797** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0107	0.00200	0.01000	0	107	70	130			
Toluene	0.00998	0.00200	0.01000	0	99.8	70	130			
Chlorobenzene	0.00897	0.00200	0.01000	0	89.7	70	130			
1,1-Dichloroethene	0.0114	0.00200	0.01000	0	114	70	130			
Trichloroethene (TCE)	0.0102	0.00200	0.01000	0	102	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0253		0.02500		101	70	130			
Surr: 4-Bromofluorobenzene	0.0237		0.02500		94.8	70	130			
Surr: Dibromofluoromethane	0.0251		0.02500		100	70	130			
Surr: Toluene-d8	0.0253		0.02500		101	70	130			

Sample ID **mb-19107**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS**	Batch ID: **19107**	RunNo: **26028**
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**	SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000810	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19107**	SampType: **MBLK**		TestCode: **Method 8260B/5035LOW: VOLATILES**		
Client ID: **PBS**	Batch ID: **19107**		RunNo: **26028**		
Prep Date: **5/7/2015**	Analysis Date: **5/7/2015**		SeqNo: **771798**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
[illegible]lorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19107** SampType: **MBLK** TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **PBS** Batch ID: **19107** RunNo: **26028**
Prep Date: **5/7/2015** Analysis Date: **5/7/2015** SeqNo: **771798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0256		0.02500		102	70	130			
Surr: 4-Bromofluorobenzene	0.0245		0.02500		97.9	70	130			
Surr: Dibromofluoromethane	0.0258		0.02500		103	70	130			
Surr: Toluene-d8	0.0232		0.02500		92.8	70	130			

Sample ID **1505223-001Ams** SampType: **MS** TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **SWMU 10-6 (2-4')** Batch ID: **19107** RunNo: **26028**
Prep Date: **5/7/2015** Analysis Date: **5/7/2015** SeqNo: **771941** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0118	0.00219	0.01097	0.003867	72.7	33.4	127			
Toluene	0.0112	0.00219	0.01097	0.002747	76.9	24.8	130			
Chlorobenzene	0.0103	0.00219	0.01097	0	94.3	25.8	132			
1,1-Dichloroethene	0.0138	0.00219	0.01097	0	126	70	130			
Trichloroethene (TCE)	0.0122	0.00219	0.01097	0	111	70	130			
Surr: 1,2-Dichloroethane-d4	0.0255		0.02742		93.0	70	130			
Surr: 4-Bromofluorobenzene	0.0259		0.02742		94.3	70	130			
Surr: Dibromofluoromethane	0.0279		0.02742		102	70	130			
Surr: Toluene-d8	0.0245		0.02742		89.5	70	130			

Sample ID **1505223-001Amsd** SampType: **MSD** TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **SWMU 10-6 (2-4')** Batch ID: **19107** RunNo: **26028**
Prep Date: **5/7/2015** Analysis Date: **5/7/2015** SeqNo: **772064** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0125	0.00219	0.01093	0.003867	79.2	33.4	127	5.53	20	
Toluene	0.0113	0.00219	0.01093	0.002747	78.4	24.8	130	1.16	20	
Chlorobenzene	0.0103	0.00219	0.01093	0	94.0	25.8	132	0.715	20	
1,1-Dichloroethene	0.0133	0.00219	0.01093	0	122	70	130	3.22	20	
Trichloroethene (TCE)	0.0121	0.00219	0.01093	0	110	70	130	1.03	20	
Surr: 1,2-Dichloroethane-d4	0.0266		0.02732		97.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.0248		0.02732		90.8	70	130	0	0	
Surr: Dibromofluoromethane	0.0284		0.02732		104	70	130	0	0	
Surr: Toluene-d8	0.0267		0.02732		97.9	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBS**	Batch ID: **19157**		RunNo: **26173**		
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**		SeqNo: **776628**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
--	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19157**	SampType: **MBLK**			TestCode: **EPA Method 8270C: Semivolatiles**						
Client ID: **PBS**	Batch ID: **19157**			RunNo: **26173**						
Prep Date: **5/11/2015**	Analysis Date: **5/13/2015**			SeqNo: **776628**			Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcs-19157**	SampType:	**LCS**	TestCode:	**EPA Method 8270C: Semivolatiles**
Client ID:	**LCSS**	Batch ID:	**19157**	RunNo:	**26173**
Prep Date:	**5/11/2015**	Analysis Date:	**5/13/2015**	SeqNo:	**776629**
Units:	**mg/Kg**				

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
..	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19112	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury						
Client ID:	PBS	Batch ID:	19112	RunNo:	26073						
Prep Date:	5/7/2015	Analysis Date:	5/8/2015	SeqNo:	773113	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.033								

Sample ID	LCS-19112	SampType:	LCS	TestCode:	EPA Method 7471: Mercury						
Client ID:	LCSS	Batch ID:	19112	RunNo:	26073						
Prep Date:	5/7/2015	Analysis Date:	5/8/2015	SeqNo:	773114	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.16	0.033	0.1667	0	98.3	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505223**

12-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19082	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals
Client ID:	PBS	Batch ID:	19082	RunNo:	26074
Prep Date:	5/6/2015	Analysis Date:	5/8/2015	SeqNo:	773158 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	0.028	0.10								J
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	0.75	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	LCS-19082	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals
t ID:	LCSS	Batch ID:	19082	RunNo:	26074
Prep Date:	5/6/2015	Analysis Date:	5/8/2015	SeqNo:	773159 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	101	80	120			
Arsenic	26	2.5	25.00	0	103	80	120			
Barium	25	0.10	25.00	0	98.4	80	120			
Beryllium	26	0.15	25.00	0	104	80	120			
Cadmium	25	0.10	25.00	0	99.3	80	120			
Chromium	25	0.30	25.00	0	100	80	120			
Cobalt	24	0.30	25.00	0	97.3	80	120			
Iron	26	2.5	25.00	0	104	80	120			
Lead	25	0.25	25.00	0	99.6	80	120			
Manganese	25	0.10	25.00	0	99.4	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	100	80	120			
Silver	5.3	0.25	5.000	0	106	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	100	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505223 RcptNo: 1

Received by/date: 05/05/15

Logged By: Ashley Gallegos 5/5/2015 2:55:00 PM

Completed By: Ashley Gallegos 5/6/2015 9:49:27 AM

Reviewed By: 05/06/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐ # of preserved bottles checked for pH: (<2 or >12 unless noted)
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐ Checked by:
    (If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding _____

Client Instructions _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax# CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505223	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5.4.15	1520	SOIL	SWMU 10-6(2-4')	JARS-2	NEAT	-001			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					
	1530		SWMU 10-6(10-12')	JARS-2	NEAT	-002			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					
	1550		SWMU 10-2 (0-2')	JARS-2	NEAT	-003			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					
	1600		SWMU 10-2 (2-4')	JARS-2	NEAT	-004			✓							✓	✓	✓			
				VIALS-2	MeOH											✓					
				VIALS-2	SOBI											✓					

Date	Time	Relinquished by:	Received by:	Date	Time
5.5.15	0745	[signature]	[signature]	5/5/15	1200
5/5/15	1455	[signature]	A Gallegos	05/05/15	1455

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain of-Custody Record

Client: WESTERN REFINING SW, INC. GALLUP REFINERY

Mailing Address: 92 GIANT CROSSING RD GALLUP, NM 87301

Phone #: 505-722-0231

email or Fax#: CHERYL.JOHNSON@WNR.COM

QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: SWMU 10

Project #:

Project Manager: CHERYL JOHNSON

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505223	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS AND CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5.4.15	—	SOIL	SWMU 10 DUP03	2 JARS	NEAT	-005			✓							✓	✓	✓			
	—			2 VIALS	MeOH											✓					
	—			2 VIALS	SOBI											✓					
	—	—	MeOH BLANK	2 VIALS	MeOH	-006										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.5.15	0745	[signature]	[signature]	5/5/15	12:00
5.5.15	1455	[signature]	A M Gallegos	05/05/15	1455

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 27, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505570

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/12/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 19, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505570**
Date: **10/27/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-14 (6-8')
Collection Date: 5/12/2015 10:00:00 AM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	1200	61	110		mg/Kg-dr	10	5/14/2015 3:41:49 PM	19200
Motor Oil Range Organics (MRO)	ND	550	550		mg/Kg-dr	10	5/14/2015 3:41:49 PM	19200
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/14/2015 3:41:49 PM	19200
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	11	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0046	0.0030	0.034	J	mg/Kg-dr	1	5/29/2015 12:37:30 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.1	5.8		mg/Kg-dr	2	5/16/2015 4:12:10 PM	19259
Arsenic	0.87	0.34	2.9	J	mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Barium	160	0.035	0.12		mg/Kg-dr	1	5/16/2015 4:42:40 PM	19259
Beryllium	0.78	0.0086	0.17		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Chromium	7.0	0.070	0.35		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Cobalt	4.5	0.044	0.35		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Iron	11000	70	290		mg/Kg-dr	100	5/16/2015 3:44:23 PM	19259
d	3.6	0.13	0.29		mg/Kg-dr	1	5/16/2015 4:42:40 PM	19259
Manganese	430	0.14	0.23		mg/Kg-dr	2	5/16/2015 4:12:10 PM	19259
Nickel	7.1	0.15	0.58		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Vanadium	13	0.039	2.9		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Zinc	14	0.75	2.9		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Aniline	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzyl alcohol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-14 (6-8')
Collection Date: 5/12/2015 10:00:00 AM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.086	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
[illegible]-Dichlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
[illegible]-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
3,3'-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dinitrophenol	ND	0.047	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Fluorene	0.20	0.15	0.22	J	mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachlorocyclopentadiene	ND	0.078	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachloroethane	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-14 (6-8')
Collection Date: 5/12/2015 10:00:00 AM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Nitrophenol	ND	0.097	0.28		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
[illegible] 6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Surr: 2-Fluorophenol	59.5		26.4-129		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: Phenol-d5	69.1		34.8-118		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: 2,4,6-Tribromophenol	48.3		26.8-128		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: Nitrobenzene-d5	76.9		35.8-124		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: 2-Fluorobiphenyl	66.8		24.5-139		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: 4-Terphenyl-d14	54.2		29.4-129		%REC	1	5/21/2015 3:04:40 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0042	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Toluene	ND	0.0034	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Ethylbenzene	ND	0.0026	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0040	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,4-Trimethylbenzene	ND	0.0014	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,3,5-Trimethylbenzene	ND	0.0019	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.011	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Naphthalene	ND	0.0067	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1-Methylnaphthalene	ND	0.017	0.11		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Methylnaphthalene	ND	0.019	0.11		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Acetone	0.054	0.021	0.43	J	mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Bromobenzene	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Bromodichloromethane	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-14 (6-8')
Collection Date: 5/12/2015 10:00:00 AM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Bromomethane	0.023	0.0055	0.085	J	mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Butanone	ND	0.018	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Carbon disulfide	ND	0.020	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Carbon tetrachloride	ND	0.0028	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chlorobenzene	ND	0.0022	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chloroethane	ND	0.022	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chloroform	ND	0.0030	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chloromethane	ND	0.0033	0.085		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Chlorotoluene	ND	0.0032	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
4-Chlorotoluene	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
cis-1,2-DCE	ND	0.0036	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
cis-1,3-Dichloropropene	ND	0.0020	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.0049	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Dibromochloromethane	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Dibromomethane	ND	0.0030	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dichlorobenzene	ND	0.0017	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
` Dichlorobenzene	ND	0.0033	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Dichlorobenzene	ND	0.0035	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Dichlorodifluoromethane	ND	0.0071	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1-Dichloroethane	ND	0.011	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1-Dichloroethene	ND	0.0020	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dichloropropane	ND	0.0016	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,3-Dichloropropane	ND	0.0039	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2,2-Dichloropropane	ND	0.0041	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1-Dichloropropene	ND	0.0042	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Hexachlorobutadiene	ND	0.0039	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Hexanone	ND	0.0070	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Isopropylbenzene	ND	0.0024	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
4-Isopropyltoluene	ND	0.0020	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
4-Methyl-2-pentanone	ND	0.0049	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Methylene chloride	ND	0.011	0.085		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
n-Butylbenzene	ND	0.0024	0.085		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
n-Propylbenzene	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
sec-Butylbenzene	0.0097	0.0040	0.028	J	mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Styrene	ND	0.0052	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
tert-Butylbenzene	ND	0.0032	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.0034	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-14 (6-8')
Collection Date: 5/12/2015 10:00:00 AM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0025	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
trans-1,2-DCE	ND	0.0018	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
trans-1,3-Dichloropropene	ND	0.0051	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,3-Trichlorobenzene	ND	0.0060	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,4-Trichlorobenzene	ND	0.0052	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,1-Trichloroethane	ND	0.0043	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,2-Trichloroethane	ND	0.0034	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Trichloroethene (TCE)	ND	0.0028	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Trichlorofluoromethane	ND	0.0086	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,3-Trichloropropane	ND	0.0048	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Vinyl chloride	ND	0.011	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Xylenes, Total	ND	0.0079	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Surr: Dibromofluoromethane	105		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
Surr: 1,2-Dichloroethane-d4	114		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
Surr: Toluene-d8	95.1		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
Surr: 4-Bromofluorobenzene	80.4		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	50	0.71	2.8		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Surr: BFB	130	0	67.4-150		%REC	1	5/14/2015 12:35:07 PM	R26209

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-14 (21-23')
Collection Date: 5/12/2015 10:15:00 AM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	6.2	11		mg/Kg-dr	1	5/14/2015 1:28:39 PM	19200
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/14/2015 1:28:39 PM	19200
Surr: DNOP	111	0	57.9-140		%REC	1	5/14/2015 1:28:39 PM	19200
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	9.5	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0032	0.0030	0.035	J	mg/Kg-dr	1	5/29/2015 12:39:20 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	7.1	13		mg/Kg-dr	5	5/27/2015 10:13:57 AM	19259
Arsenic	1.1	0.32	2.7	J	mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Barium	220	0.032	0.11		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Beryllium	0.79	0.0080	0.16		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Chromium	8.9	0.065	0.32		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Cobalt	5.0	0.041	0.32		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Iron	15000	65	270		mg/Kg-dr	100	5/16/2015 3:45:46 PM	19259
[illegible]	3.6	0.12	0.27		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Manganese	410	0.13	0.22		mg/Kg-dr	2	5/16/2015 4:20:35 PM	19259
Nickel	11	0.14	0.54		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Selenium	ND	1.6	2.7		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Vanadium	7.3	0.036	2.7		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Zinc	16	0.69	2.7		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Anthracene	ND	0.094	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benz(a)anthracene	ND	0.087	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-14 (21-23')
Collection Date: 5/12/2015 10:15:00 AM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
3,3'-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dimethylphenol	ND	0.087	0.33		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dinitrotoluene	ND	0.099	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-14 (21-23')
Collection Date: 5/12/2015 10:15:00 AM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
N-Nitrosodiphenylamine	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Pyridine	ND	0.093	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Surr: 2-Fluorophenol	86.7		26.4-129		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: Phenol-d5	90.8		34.8-118		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: 2,4,6-Tribromophenol	89.4		26.8-128		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: Nitrobenzene-d5	88.2		35.8-124		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: 2-Fluorobiphenyl	89.2		24.5-139		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: 4-Terphenyl-d14	71.8		29.4-129		%REC	1	5/19/2015 8:52:03 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0224	0.000499	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Toluene	0.0147	0.000230	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Ethylbenzene	0.00331	0.000372	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Xylenes, Total	0.0115	0.00132	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000929	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,4-Trimethylbenzene	0.00376	0.000579	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,3,5-Trimethylbenzene	0.00233	0.000388	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dichloroethane (EDC)	ND	0.000593	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dibromoethane (EDB)	ND	0.000265	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Naphthalene	0.00101	0.000724	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1-Methylnaphthalene	ND	0.000870	0.00443		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Methylnaphthalene	ND	0.000865	0.00443		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Acetone	0.00282	0.00138	0.0111	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Bromobenzene	ND	0.000616	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-14 (21-23')
Collection Date: 5/12/2015 10:15:00 AM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000299	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Bromoform	ND	0.000574	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Bromomethane	ND	0.00131	0.00332		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Butanone	ND	0.000709	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Carbon tetrachloride	ND	0.000401	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chlorobenzene	ND	0.000224	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chloroethane	ND	0.00221	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chloroform	ND	0.000456	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chloromethane	ND	0.000261	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Chlorotoluene	ND	0.000432	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Carbon disulfide	ND	0.00100	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
4-Chlorotoluene	ND	0.000427	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
cis-1,2-DCE	ND	0.000586	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
cis-1,3-Dichloropropene	ND	0.00221	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dibromo-3-chloropropane	ND	0.000651	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Dibromochloromethane	ND	0.000248	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Dibromomethane	ND	0.00126	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
[illegible]-Dichlorobenzene	ND	0.000491	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
[illegible]-Dichlorobenzene	ND	0.000375	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,4-Dichlorobenzene	ND	0.000348	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Dichlorodifluoromethane	ND	0.000904	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1-Dichloroethane	ND	0.000517	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1-Dichloroethene	ND	0.000370	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dichloropropane	ND	0.000473	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,3-Dichloropropane	ND	0.000345	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2,2-Dichloropropane	ND	0.000385	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1-Dichloropropene	ND	0.000406	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Hexachlorobutadiene	ND	0.000447	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Isopropylbenzene	0.000543	0.000514	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
4-Isopropyltoluene	ND	0.000859	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Methylene chloride	ND	0.000547	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
n-Butylbenzene	ND	0.000909	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Hexanone	ND	0.000461	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
n-Propylbenzene	0.000587	0.000415	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
sec-Butylbenzene	0.000853	0.000559	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Styrene	ND	0.000367	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
4-Methyl-2-pentanone	ND	0.000935	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
tert-Butylbenzene	ND	0.000339	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1,1,2-Tetrachloroethane	ND	0.000360	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-14 (21-23')
Collection Date: 5/12/2015 10:15:00 AM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000487	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Tetrachloroethene (PCE)	ND	0.000439	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
trans-1,2-DCE	ND	0.000358	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
trans-1,3-Dichloropropene	ND	0.000290	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,3-Trichlorobenzene	ND	0.000810	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,4-Trichlorobenzene	ND	0.000830	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1,1-Trichloroethane	ND	0.000315	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1,2-Trichloroethane	ND	0.00221	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Trichloroethene (TCE)	ND	0.000440	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Trichlorofluoromethane	ND	0.000447	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,3-Trichloropropane	ND	0.000778	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Vinyl chloride	ND	0.000253	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Surr: 1,2-Dichloroethane-d4	85.0	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
Surr: 4-Bromofluorobenzene	99.8	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
Surr: Dibromofluoromethane	92.0	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
Surr: Toluene-d8	81.3	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.82	3.3		mg/Kg-dr	1	5/15/2015 3:41:52 PM	R26221
Surr: BFB	106	0	67.4-150		%REC	1	5/15/2015 3:41:52 PM	R26221

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (4-6')
Collection Date: 5/12/2015 12:00:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	3800	54	98		mg/Kg-dr	10	5/15/2015 9:27:18 AM	19200
Motor Oil Range Organics (MRO)	680	490	490		mg/Kg-dr	10	5/15/2015 9:27:18 AM	19200
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/15/2015 9:27:18 AM	19200
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	11	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.050	0.0031	0.035		mg/Kg-dr	1	5/29/2015 12:44:48 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Arsenic	ND	0.33	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Barium	240	0.034	0.11		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Beryllium	0.61	0.0084	0.17		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Chromium	7.3	0.068	0.34		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Cobalt	3.5	0.043	0.34		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Iron	9200	68	280		mg/Kg-dr	100	5/16/2015 3:47:09 PM	19259
d	3.4	0.12	0.28		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Manganese	320	0.13	0.23		mg/Kg-dr	2	5/16/2015 4:23:20 PM	19259
Nickel	5.8	0.15	0.57		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Vanadium	13	0.038	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Zinc	16	0.73	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Acenaphthylene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Aniline	ND	0.98	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Anthracene	ND	0.95	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Azobenzene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benz(a)anthracene	ND	0.88	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(a)pyrene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(g,h,i)perylene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(k)fluoranthene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzoic acid	ND	0.64	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzyl alcohol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (4-6')
Collection Date: 5/12/2015 12:00:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.86	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.3	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Bromophenyl phenyl ether	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Butyl benzyl phthalate	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Carbazole	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Chloro-3-methylphenol	ND	1.1	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Chloroaniline	ND	1.0	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Chloronaphthalene	ND	1.2	2.8		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Chlorophenol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Chlorophenyl phenyl ether	ND	1.7	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Chrysene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Di-n-butyl phthalate	ND	1.3	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Di-n-octyl phthalate	ND	1.2	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Dibenz(a,h)anthracene	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Dibenzofuran	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
[illegible]-Dichlorobenzene	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
[illegible]-Dichlorobenzene	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
3,3'-Dichlorobenzidine	ND	0.86	2.8		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Diethyl phthalate	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Dimethyl phthalate	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dichlorophenol	ND	1.1	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dimethylphenol	ND	0.88	3.4		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.61	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dinitrophenol	ND	0.47	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dinitrotoluene	ND	1.0	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,6-Dinitrotoluene	ND	1.2	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Fluoranthene	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Fluorene	1.8	1.5	2.2	J	mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachlorobenzene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachlorobutadiene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachlorocyclopentadiene	ND	0.78	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachloroethane	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Isophorone	ND	1.2	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1-Methylnaphthalene	14	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Methylnaphthalene	23	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Methylphenol	ND	1.1	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (4-6')
Collection Date: 5/12/2015 12:00:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
N-Nitrosodiphenylamine	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Naphthalene	5.3	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Nitroaniline	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
3-Nitroaniline	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Nitroaniline	ND	1.0	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Nitrobenzene	ND	1.2	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Nitrophenol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Nitrophenol	ND	0.97	2.8		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Pentachlorophenol	ND	0.70	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Phenanthrene	3.6	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Phenol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Pyrene	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Pyridine	ND	0.94	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1,2,4-Trichlorobenzene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4,5-Trichlorophenol	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4,6-Trichlorophenol	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 4:27:15 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.023	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Toluene	0.021	0.019	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Ethylbenzene	0.10	0.014	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.022	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,4-Trimethylbenzene	0.40	0.0078	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,3,5-Trimethylbenzene	0.31	0.010	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.063	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Naphthalene	0.54	0.037	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1-Methylnaphthalene	1.6	0.094	0.63		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Methylnaphthalene	1.8	0.10	0.63		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Acetone	0.15	0.12	2.4	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Bromobenzene	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Bromodichloromethane	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (4-6')
Collection Date: 5/12/2015 12:00:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Bromomethane	0.12	0.030	0.47	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Butanone	ND	0.10	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Carbon disulfide	ND	0.11	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Carbon tetrachloride	ND	0.015	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chlorobenzene	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chloroethane	ND	0.12	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chloroform	ND	0.016	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chloromethane	ND	0.018	0.47		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Chlorotoluene	ND	0.018	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
4-Chlorotoluene	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
cis-1,2-DCE	ND	0.020	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
cis-1,3-Dichloropropene	ND	0.011	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.027	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Dibromochloromethane	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Dibromomethane	ND	0.017	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dichlorobenzene	ND	0.0095	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,3-Dichlorobenzene	ND	0.018	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,4-Dichlorobenzene	ND	0.020	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Dichlorodifluoromethane	ND	0.039	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1-Dichloroethane	ND	0.063	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1-Dichloroethene	ND	0.011	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dichloropropane	ND	0.0088	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,3-Dichloropropane	ND	0.022	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2,2-Dichloropropane	ND	0.023	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1-Dichloropropene	ND	0.023	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Hexachlorobutadiene	ND	0.022	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Hexanone	ND	0.039	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Isopropylbenzene	0.040	0.013	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
4-Isopropyltoluene	ND	0.011	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
4-Methyl-2-pentanone	ND	0.027	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Methylene chloride	ND	0.063	0.47		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
n-Butylbenzene	0.063	0.014	0.47	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
n-Propylbenzene	0.057	0.012	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
sec-Butylbenzene	ND	0.022	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Styrene	ND	0.029	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
tert-Butylbenzene	ND	0.018	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.019	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (4-6')
Collection Date: 5/12/2015 12:00:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.014	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
trans-1,2-DCE	ND	0.010	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
trans-1,3-Dichloropropene	ND	0.028	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,3-Trichlorobenzene	ND	0.034	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,4-Trichlorobenzene	ND	0.029	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,1-Trichloroethane	ND	0.024	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,2-Trichloroethane	ND	0.019	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Trichloroethene (TCE)	ND	0.015	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Trichlorofluoromethane	ND	0.047	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,3-Trichloropropane	ND	0.026	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Vinyl chloride	ND	0.063	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Xylenes, Total	0.73	0.044	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Surr: Dibromofluoromethane	106		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
Surr: 1,2-Dichloroethane-d4	110		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
Surr: Toluene-d8	98.2		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
Surr: 4-Bromofluorobenzene	87.5		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	40	3.9	16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Surr: BFB	111	0	67.4-150		%REC	5	5/14/2015 1:03:56 PM	R26209

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (8-10')
Collection Date: 5/12/2015 12:15:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	870	5.3	9.6		mg/Kg-dr	1	5/15/2015 10:20:57 AM	19200
Motor Oil Range Organics (MRO)	280	48	48		mg/Kg-dr	1	5/15/2015 10:20:57 AM	19200
Surr: DNOP	173	0	57.9-140	S	%REC	1	5/15/2015 10:20:57 AM	19200
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	17	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.014	0.0037	0.042	J	mg/Kg-dr	1	5/29/2015 12:46:33 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.2	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Arsenic	0.91	0.72	6.2	J	mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Barium	330	0.073	0.25		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Beryllium	0.98	0.018	0.37		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Cadmium	ND	0.068	0.25		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Chromium	8.1	0.15	0.74		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Cobalt	5.0	0.093	0.74		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Iron	12000	74	310		mg/Kg-dr	100	5/16/2015 3:48:48 PM	19259
[illegible]	5.8	0.27	0.62		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Manganese	400	0.14	0.25		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Nickel	7.8	0.32	1.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Selenium	ND	3.8	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Silver	ND	0.073	0.62		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Vanadium	14	0.082	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Zinc	18	1.6	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.5	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Acenaphthylene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Aniline	ND	1.0	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Anthracene	ND	1.0	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Azobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benz(a)anthracene	ND	0.94	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(a)pyrene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(g,h,i)perylene	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(k)fluoranthene	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzoic acid	ND	0.69	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzyl alcohol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (8-10')
Collection Date: 5/12/2015 12:15:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.92	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.4	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Bromophenyl phenyl ether	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Butyl benzyl phthalate	ND	1.5	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Carbazole	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Chloro-3-methylphenol	ND	1.2	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Chloroaniline	ND	1.1	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Chloronaphthalene	ND	1.3	3.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Chlorophenol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Chlorophenyl phenyl ether	ND	1.8	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Chrysene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Di-n-butyl phthalate	ND	1.4	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Di-n-octyl phthalate	ND	1.3	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Dibenz(a,h)anthracene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Dibenzofuran	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
`-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
,-Dichlorobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
3,3'-Dichlorobenzidine	ND	0.93	3.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Diethyl phthalate	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Dimethyl phthalate	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dichlorophenol	ND	1.2	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dimethylphenol	ND	0.94	3.6		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.65	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dinitrophenol	ND	0.50	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dinitrotoluene	ND	1.1	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,6-Dinitrotoluene	ND	1.3	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Fluoranthene	ND	1.5	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Fluorene	ND	1.6	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachlorobutadiene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachlorocyclopentadiene	ND	0.83	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachloroethane	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Isophorone	ND	1.3	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1-Methylnaphthalene	3.8	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Methylnaphthalene	5.7	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Methylphenol	ND	1.2	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (8-10')
Collection Date: 5/12/2015 12:15:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
N-Nitrosodiphenylamine	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Naphthalene	1.2	1.1	2.4	J	mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Nitroaniline	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
3-Nitroaniline	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Nitroaniline	ND	1.1	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Nitrobenzene	ND	1.2	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Nitrophenol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Nitrophenol	ND	1.0	3.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Pentachlorophenol	ND	0.75	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Phenanthrene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Phenol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Pyrene	ND	1.6	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Pyridine	ND	1.0	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1,2,4-Trichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4,5-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4,6-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 4:54:49 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0048	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Toluene	0.020	0.0038	0.032	J	mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Ethylbenzene	0.21	0.0030	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0046	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,4-Trimethylbenzene	0.79	0.0016	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,3,5-Trimethylbenzene	0.29	0.0021	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.013	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0026	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Naphthalene	0.46	0.0077	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1-Methylnaphthalene	1.3	0.019	0.13		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Methylnaphthalene	2.3	0.021	0.13		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Acetone	0.058	0.024	0.48	J	mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Bromobenzene	ND	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Bromodichloromethane	ND	0.0026	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (8-10')
Collection Date: 5/12/2015 12:15:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.0026	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Bromomethane	0.026	0.0062	0.097	J	mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Butanone	ND	0.021	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Carbon disulfide	ND	0.023	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Carbon tetrachloride	ND	0.0031	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chlorobenzene	ND	0.0025	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chloroethane	ND	0.025	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chloroform	ND	0.0034	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chloromethane	ND	0.0037	0.097		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Chlorotoluene	ND	0.0037	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
4-Chlorotoluene	ND	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
cis-1,2-DCE	ND	0.0041	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
cis-1,3-Dichloropropene	ND	0.0022	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.0056	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Dibromochloromethane	ND	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Dibromomethane	ND	0.0034	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dichlorobenzene	ND	0.0019	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
[illegible]-Dichlorobenzene	ND	0.0038	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
[illegible]-Dichlorobenzene	ND	0.0040	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Dichlorodifluoromethane	ND	0.0081	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1-Dichloroethane	ND	0.013	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1-Dichloroethene	ND	0.0022	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dichloropropane	ND	0.0018	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,3-Dichloropropane	ND	0.0045	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2,2-Dichloropropane	ND	0.0047	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1-Dichloropropene	ND	0.0048	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Hexachlorobutadiene	ND	0.0045	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Hexanone	ND	0.0079	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Isopropylbenzene	0.077	0.0027	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
4-Isopropyltoluene	ND	0.0023	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
4-Methyl-2-pentanone	ND	0.0056	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Methylene chloride	ND	0.013	0.097		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
n-Butylbenzene	0.098	0.0028	0.097		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
n-Propylbenzene	0.12	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
sec-Butylbenzene	0.051	0.0046	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Styrene	ND	0.0059	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
tert-Butylbenzene	ND	0.0037	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.0027	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.0039	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209

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CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (8-10')
Collection Date: 5/12/2015 12:15:00 PM
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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0028	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
trans-1,2-DCE	ND	0.0021	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
trans-1,3-Dichloropropene	ND	0.0058	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,3-Trichlorobenzene	ND	0.0069	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,4-Trichlorobenzene	ND	0.0060	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,1-Trichloroethane	ND	0.0049	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,2-Trichloroethane	ND	0.0039	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Trichloroethene (TCE)	ND	0.0031	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Trichlorofluoromethane	ND	0.0098	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,3-Trichloropropane	ND	0.0054	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Vinyl chloride	ND	0.013	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Xylenes, Total	1.7	0.0090	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Surr: Dibromofluoromethane	101		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
Surr: 1,2-Dichloroethane-d4	110		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
Surr: Toluene-d8	87.5		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
Surr: 4-Bromofluorobenzene	89.2		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	68	0.81	3.2		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Surr: BFB	109	0	67.4-150		%REC	1	5/14/2015 1:32:43 PM	R26209

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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (18-20')
Collection Date: 5/12/2015 12:25:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	6.4	12		mg/Kg-dr	1	5/14/2015 3:15:18 PM	19200
Motor Oil Range Organics (MRO)	ND	58	58		mg/Kg-dr	1	5/14/2015 3:15:18 PM	19200
Surr: DNOP	108	0	57.9-140		%REC	1	5/14/2015 3:15:18 PM	19200
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	12	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0032	0.037		mg/Kg-dr	1	5/31/2015 10:41:10 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.0	5.7		mg/Kg-dr	2	5/16/2015 4:29:02 PM	19259
Arsenic	0.84	0.34	2.9	J	mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Barium	420	0.068	0.23		mg/Kg-dr	2	5/16/2015 4:29:02 PM	19259
Beryllium	0.89	0.0085	0.17		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Chromium	11	0.069	0.34		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Cobalt	7.7	0.043	0.34		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Iron	16000	69	290		mg/Kg-dr	100	5/16/2015 3:50:18 PM	19259
Lead	3.5	0.12	0.29		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Manganese	890	0.34	0.57		mg/Kg-dr	5	5/16/2015 4:48:11 PM	19259
Nickel	13	0.15	0.57		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Vanadium	5.2	0.038	2.9		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Zinc	23	0.74	2.9		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Aniline	ND	0.099	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Anthracene	ND	0.097	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benz(a)anthracene	ND	0.089	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzoic acid	ND	0.065	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (18-20')
Collection Date: 5/12/2015 12:25:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.087	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Chloroaniline	ND	0.11	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Chrysene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
[illegible]-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
3,3'-Dichlorobenzidine	ND	0.088	0.28		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Dimethyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dimethylphenol	ND	0.089	0.34		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.062	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dinitrophenol	ND	0.047	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Fluorene	ND	0.15	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachlorocyclopentadiene	ND	0.079	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Methylphenol	ND	0.11	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (18-20')
Collection Date: 5/12/2015 12:25:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Nitrophenol	ND	0.098	0.28		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Pentachlorophenol	ND	0.071	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Pyridine	ND	0.096	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Surr: 2-Fluorophenol	60.4		26.4-129		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: Phenol-d5	62.4		34.8-118		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: 2,4,6-Tribromophenol	63.2		26.8-128		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: Nitrobenzene-d5	61.0		35.8-124		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: 2-Fluorobiphenyl	56.7		24.5-139		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: 4-Terphenyl-d14	51.3		29.4-129		%REC	1	5/19/2015 9:20:04 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0260	0.000547	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Toluene	0.0162	0.000252	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Ethylbenzene	0.00371	0.000408	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Xylenes, Total	0.0121	0.00145	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Methyl tert-butyl ether (MTBE)	ND	0.00102	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,4-Trimethylbenzene	0.00377	0.000634	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,3,5-Trimethylbenzene	0.00245	0.000426	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dichloroethane (EDC)	ND	0.000650	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dibromoethane (EDB)	ND	0.000290	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Naphthalene	0.00119	0.000793	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1-Methylnaphthalene	0.00126	0.000953	0.00485	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Methylnaphthalene	0.00130	0.000948	0.00485	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Acetone	0.00262	0.00152	0.0121	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Bromobenzene	ND	0.000675	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (18-20')
Collection Date: 5/12/2015 12:25:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000328	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Bromoform	ND	0.000629	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Bromomethane	ND	0.00144	0.00364		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Butanone	ND	0.000777	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Carbon tetrachloride	ND	0.000439	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chlorobenzene	ND	0.000246	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chloroethane	ND	0.00243	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chloroform	ND	0.000500	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chloromethane	ND	0.000286	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Chlorotoluene	ND	0.000474	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Carbon disulfide	ND	0.00110	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
4-Chlorotoluene	ND	0.000468	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
cis-1,2-DCE	ND	0.000642	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
cis-1,3-Dichloropropene	ND	0.00243	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dibromo-3-chloropropane	ND	0.000713	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Dibromochloromethane	ND	0.000272	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Dibromomethane	ND	0.00138	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
[illegible]-Dichlorobenzene	ND	0.000539	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
[illegible]-Dichlorobenzene	ND	0.000411	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,4-Dichlorobenzene	ND	0.000381	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Dichlorodifluoromethane	ND	0.000991	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1-Dichloroethane	ND	0.000567	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1-Dichloroethene	ND	0.000405	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dichloropropane	ND	0.000519	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,3-Dichloropropane	ND	0.000378	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2,2-Dichloropropane	ND	0.000422	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1-Dichloropropene	ND	0.000444	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Hexachlorobutadiene	ND	0.000490	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Isopropylbenzene	0.000607	0.000563	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
4-Isopropyltoluene	ND	0.000942	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Methylene chloride	0.000813	0.000600	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
n-Butylbenzene	ND	0.000996	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Hexanone	ND	0.000505	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
n-Propylbenzene	0.000680	0.000454	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
sec-Butylbenzene	0.000947	0.000613	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Styrene	ND	0.000402	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
4-Methyl-2-pentanone	ND	0.00102	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
tert-Butylbenzene	ND	0.000372	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1,1,2-Tetrachloroethane	ND	0.000395	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505570-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-11 (18-20')
Collection Date: 5/12/2015 12:25:00 PM
Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000534	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Tetrachloroethene (PCE)	ND	0.000481	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
trans-1,2-DCE	ND	0.000392	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
trans-1,3-Dichloropropene	ND	0.000317	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,3-Trichlorobenzene	ND	0.000888	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,4-Trichlorobenzene	ND	0.000909	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1,1-Trichloroethane	ND	0.000345	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1,2-Trichloroethane	ND	0.00243	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Trichloroethene (TCE)	ND	0.000482	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Trichlorofluoromethane	ND	0.000490	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,3-Trichloropropane	ND	0.000852	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Vinyl chloride	ND	0.000277	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Surr: 1,2-Dichloroethane-d4	92.4	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
Surr: Toluene-d8	83.2	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.91	3.6		mg/Kg-dr	1	5/14/2015 3:57:02 PM	R26209
Surr: BFB	113	0	67.4-150		%REC	1	5/14/2015 3:57:02 PM	R26209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765169-01

Date Received : May 14, 2015
Description :

Site ID :

Sample ID : 1505570-001C SWMU 10-14 6-8FT

Project # :

Collected By :
Collection Date : 05/12/15 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	-35.		mV	2580 B-2011	05/19/15	1
pH	8.4	0.10	su	9045D	05/15/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-01 (PH) - 8.4 at 20.2c

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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765169-02

Date Received : May 14, 2015
Description :

Site ID :

Sample ID : 1505570-002C SWMU 10-14 21-23FT

Project # :

Collected By :
Collection Date : 05/12/15 10:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	-29.		mV	2580 B-2011	05/19/15	1
pH	9.0	0.10	su	9045D	05/15/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-02 (PH) - 9.0 at 20.4c

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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765169-03

Date Received : May 14, 2015
Description :

Site ID :

Sample ID : 1505570-003C SWMU 10-11 4-6FT

Project # :

Collected By :
Collection Date : 05/12/15 12:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	27.		mV	2580 B-2011	05/19/15	1
pH	7.5	0.10	su	9045D	05/15/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-03 (PH) - 7.5 at 20.7c

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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765169-04

Date Received : May 14, 2015
Description :

Site ID :

Sample ID : 1505570-004C SWMU 10-11 8-10FT

Project # :

Collected By :
Collection Date : 05/12/15 12:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	15.		mV	2580 B-2011	05/19/15	1
pH	7.9	0.10	su	9045D	05/15/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-04 (PH) - 7.9 at 20.7c

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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765169-05

Date Received : May 14, 2015
Description :

Site ID :

Sample ID : 1505570-005C SWMU 10-11 18-20FT

Project # :

Collected By :
Collection Date : 05/12/15 12:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	-4.0		mV	2580 B-2011	05/19/15	1
pH	9.2	0.10	su	9045D	05/15/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-05 (PH) - 9.2 at 20.5c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765169

May 21, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg			WG789309	05/16/15 13:30
Cyanide	< .25	mg/kg			WG789989	05/21/15 08:51

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	5.70	5.70	0.699	1	L764621-01	WG789052
pH	su	7.90	7.90	0.127	1	L765205-01	WG789052
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L765169-05	WG789309
ORP	mV	18.0	19.0	5.41	20	L765012-01	WG789737
ORP	mV	71.0	70.0	1.42	20	L765462-10	WG789737
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-01	WG789989
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-03	WG789989

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.74	98.7	98.3-101.7	WG789052
Chromium, Hexavalent	mg/kg	59.8	71.8	120.*	80-120	WG789309
ORP	mV	100	104.	104.	90-110	WG789737
Cyanide	mg/kg	101	117.	116.	50-150	WG789989

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.76	7.74	99.0	98.3-101.7	0.258	20	WG789052
Chromium, Hexavalent	mg/kg	71.8	71.8	120.	80-120	0.0	20	WG789309
ORP	mV	105.	104.	105.	90-110	0.957	20	WG789737
Cyanide	mg/kg	125.	117.	124.	50-150	6.61	20	WG789989

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	22.4	0.0	20	110.	75-125	L765169-05	WG789309
Cyanide	mg/kg	3.32	0.0	3.33	100.	80-120	L765575-02	WG789989

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765169

May 21, 2015

		Matrix Spike Duplicate							
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	23.2	22.4	116.	75-125	3.51	20	L765169-05	WG789309
Cyanide	mg/kg	3.47	3.32	104.	80-120	4.42	20	L765575-02	WG789989

Batch number /Run number / Sample number cross reference

WG789052: R3037239: L765169-01 02 03 04 05
WG789309: R3037394: L765169-01 02 03 04 05
WG789737: R3038093: L765169-01 02 03 04 05
WG789989: R3038429: L765169-01 02 03 04 05

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19200**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19200**	RunNo: **26179**
Prep Date: **5/13/2015**	Analysis Date: **5/14/2015**	SeqNo: **776929** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		105	57.9	140			

Sample ID **LCS-19200**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19200**	RunNo: **26179**
Prep Date: **5/13/2015**	Analysis Date: **5/14/2015**	SeqNo: **776930** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	103	67.8	130			
Surr: DNOP	5.5		5.000		110	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**	
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**	
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777608**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0085	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.023	0.15								J
2-Butanone	ND	0.50								
C disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777608** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
[illegible]richlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		97.4	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		105	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777609** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	104	70	130			
Toluene	1.0	0.050	1.000	0	104	70	130			
Chlorobenzene	0.98	0.050	1.000	0	98.3	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **R26209** RunNo: **26209**
Prep Date: Analysis Date: **5/14/2015** SeqNo: **777609** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	118	60.6	134			
Trichloroethene (TCE)	0.94	0.050	1.000	0	94.2	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		109	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			

Sample ID **1505570-003a ms** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU 10-11 (4-6')** Batch ID: **R26209** RunNo: **26209**
Prep Date: Analysis Date: **5/14/2015** SeqNo: **777617** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.6	0.28	5.590	0	99.8	57.8	132			
Toluene	5.7	0.28	5.590	0.02054	102	54.8	139			
Chlorobenzene	5.7	0.28	5.590	0	102	63.5	134			
1,1-Dichloroethene	6.0	0.28	5.590	0	108	26.4	145			
Trichloroethene (TCE)	5.1	0.28	5.590	0	90.4	54.9	125			
: Dibromofluoromethane	2.6		2.795		93.6	70	130			
Surr: 1,2-Dichloroethane-d4	2.8		2.795		101	70	130			
Surr: Toluene-d8	2.7		2.795		98.2	70	130			
Surr: 4-Bromofluorobenzene	2.8		2.795		101	70	130			

Sample ID **1505570-003a msd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **SWMU 10-11 (4-6')** Batch ID: **R26209** RunNo: **26209**
Prep Date: Analysis Date: **5/14/2015** SeqNo: **777618** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.5	0.28	5.590	0	97.6	57.8	132	2.27	20	
Toluene	5.5	0.28	5.590	0.02054	98.1	54.8	139	4.10	20	
Chlorobenzene	5.6	0.28	5.590	0	100	63.5	134	2.03	20	
1,1-Dichloroethene	6.2	0.28	5.590	0	111	26.4	145	3.06	20	
Trichloroethene (TCE)	4.9	0.28	5.590	0	88.3	54.9	125	2.40	20	
Surr: Dibromofluoromethane	2.8		2.795		101	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	3.0		2.795		107	70	130	0	0	
Surr: Toluene-d8	2.7		2.795		97.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	2.4		2.795		86.3	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778722** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		107	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778723** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.48		0.5000		95.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		98.8	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
E[illegible]enzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**	
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	3.0		3.330		89.3	26.4	129			
Surr: Phenol-d5	2.9		3.330		86.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		85.8	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		88.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		87.0	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19270**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781323** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	86.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	88.6	52.3	122			
2-Chlorophenol	2.9	0.20	3.330	0	87.7	49.9	115			
1,4-Dichlorobenzene	1.5	0.20	1.670	0	91.5	43.7	107			
2,4-Dinitrotoluene	1.2	0.50	1.670	0	74.4	36	106			
N-Nitrosodi-n-propylamine	1.3	0.20	1.670	0	80.6	39.5	110			
4-Nitrophenol	2.8	0.25	3.330	0	83.9	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	75.8	23.7	111			
Phenol	3.2	0.20	3.330	0	97.0	52.7	119			
Pyrene	1.5	0.20	1.670	0	90.1	50.4	116			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	101	40.1	114			
Surr: 2-Fluorophenol	3.3		3.330		98.7	26.4	129			
Surr: Phenol-d5	3.4		3.330		103	34.8	118			
Surr: 2,4,6-Tribromophenol	3.4		3.330		101	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.670		96.4	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		100	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.2	29.4	129			

Sample ID **1505570-001Bms**	SampType: **MS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-14 (6-8')**	Batch ID: **19270**	RunNo: **26352**
Prep Date: **5/18/2015**	Analysis Date: **5/21/2015**	SeqNo: **783097** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.23	1.884	0	77.1	36.3	121			
4-Chloro-3-methylphenol	2.2	0.56	3.756	0	58.7	48.2	119			
2-Chlorophenol	2.3	0.23	3.756	0	60.6	37.2	114			
1,4-Dichlorobenzene	1.1	0.23	1.884	0	59.7	28.8	106			
2,4-Dinitrotoluene	1.0	0.56	1.884	0	54.1	34.6	111			
N-Nitrosodi-n-propylamine	1.3	0.23	1.884	0	68.3	32.7	117			
4-Nitrophenol	2.6	0.28	3.756	0	68.3	30.1	134			
Pentachlorophenol	2.0	0.45	3.756	0.07937	49.8	24	120			
Phenol	2.3	0.23	3.756	0	61.4	38.3	118			
Pyrene	1.4	0.23	1.884	0	75.0	38.3	134			
1,2,4-Trichlorobenzene	1.2	0.23	1.884	0	61.2	31.8	110			
Surr: 2-Fluorophenol	2.2		3.756		57.6	26.4	129			
Surr: Phenol-d5	2.5		3.756		66.1	34.8	118			
Surr: 2,4,6-Tribromophenol	2.3		3.756		59.9	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.884		67.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.3		1.884		68.2	24.5	139			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- .. Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **1505570-001Bms** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-14 (6-8')** Batch ID: **19270** RunNo: **26352**
Prep Date: **5/18/2015** Analysis Date: **5/21/2015** SeqNo: **783097** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.1		1.884		55.8	29.4	129			

Sample ID **1505570-001Bmsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **SWMU 10-14 (6-8')** Batch ID: **19270** RunNo: **26352**
Prep Date: **5/18/2015** Analysis Date: **5/21/2015** SeqNo: **783098** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.23	1.880	0	82.0	36.3	121	6.00	25.4	
4-Chloro-3-methylphenol	2.5	0.56	3.749	0	66.7	48.2	119	12.6	30.4	
2-Chlorophenol	2.7	0.23	3.749	0	71.7	37.2	114	16.4	33.4	
1,4-Dichlorobenzene	1.3	0.23	1.880	0	71.3	28.8	106	17.5	20.9	
2,4-Dinitrotoluene	1.1	0.56	1.880	0	56.7	34.6	111	4.66	27.9	
N-Nitrosodi-n-propylamine	1.7	0.23	1.880	0	93.0	32.7	117	30.4	27.5	R
4-Nitrophenol	3.0	0.28	3.749	0	81.1	30.1	134	16.9	33.7	
Pentachlorophenol	1.9	0.45	3.749	0.07937	49.3	24	120	1.25	39.7	
Phenol	2.7	0.23	3.749	0	73.2	38.3	118	17.3	30.1	
Pyrene	1.5	0.23	1.880	0	80.8	38.3	134	7.25	22.7	
[illegible]richlorobenzene	1.2	0.23	1.880	0	63.9	31.8	110	4.14	27.8	
Surr: 2-Fluorophenol	2.6		3.749		68.8	26.4	129	0	0	
Surr: Phenol-d5	3.0		3.749		79.2	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	2.2		3.749		57.5	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.5		1.880		81.7	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.4		1.880		74.9	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.1		1.880		60.6	29.4	129	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19445	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury				
Client ID:	PBS	Batch ID:	19445	RunNo:	26497				
Prep Date:	5/28/2015	Analysis Date:	5/29/2015	SeqNo:	787358	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-19445	SampType:	LCS	TestCode:	EPA Method 7471: Mercury				
Client ID:	LCSS	Batch ID:	19445	RunNo:	26497				
Prep Date:	5/28/2015	Analysis Date:	5/29/2015	SeqNo:	787359	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	99.7	80	120			

Sample ID	1505570-002BMS	SampType:	MS	TestCode:	EPA Method 7471: Mercury				
Client ID:	SWMU 10-14 (21-23'	Batch ID:	19445	RunNo:	26497				
Prep Date:	5/28/2015	Analysis Date:	5/29/2015	SeqNo:	787374	Units:	mg/Kg-dry		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.19	0.035	0.1789	0.003199	103	75	125			

Sample ID	1505570-002BMSD	SampType:	MSD	TestCode:	EPA Method 7471: Mercury				
Client ID:	SWMU 10-14 (21-23'	Batch ID:	19445	RunNo:	26497				
Prep Date:	5/28/2015	Analysis Date:	5/29/2015	SeqNo:	787375	Units:	mg/Kg-dry		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.19	0.036	0.1839	0.003199	102	75	125	1.94	20	

Sample ID	MB-19475	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury				
Client ID:	PBS	Batch ID:	19475	RunNo:	26535				
Prep Date:	5/30/2015	Analysis Date:	5/31/2015	SeqNo:	788620	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-19475	SampType:	LCS	TestCode:	EPA Method 7471: Mercury				
Client ID:	LCSS	Batch ID:	19475	RunNo:	26535				
Prep Date:	5/30/2015	Analysis Date:	5/31/2015	SeqNo:	788621	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	97.3	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- * Sample Diluted Due to Matrix
- .. Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19259** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **19259** RunNo: **26236**
Prep Date: **5/15/2015** Analysis Date: **5/16/2015** SeqNo: **778671** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	0.054	0.10								J
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	0.77	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	0.032	0.25								J
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID **LCS-19259** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
t ID: **LCSS** Batch ID: **19259** RunNo: **26236**
Prep Date: **5/15/2015** Analysis Date: **5/16/2015** SeqNo: **778674** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	23	2.5	25.00	0	93.9	80	120			
Arsenic	27	2.5	25.00	0	109	80	120			
Barium	25	0.10	25.00	0	101	80	120			
Beryllium	27	0.15	25.00	0	106	80	120			
Cadmium	26	0.10	25.00	0	104	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Cobalt	25	0.30	25.00	0	99.4	80	120			
Iron	25	2.5	25.00	0	99.0	80	120			
Lead	25	0.25	25.00	0	99.7	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	101	80	120			
Selenium	29	2.5	25.00	0	115	80	120			
Silver	5.4	0.25	5.000	0	108	80	120			
Vanadium	26	2.5	25.00	0	106	80	120			
Zinc	27	2.5	25.00	0	107	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- .. Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **1505570-001BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-14 (6-8')** Batch ID: **19259** RunNo: **26236**
Prep Date: **5/15/2015** Analysis Date: **5/16/2015** SeqNo: **778691** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	24	2.7	27.39	0.8732	85.5	75	125			
Beryllium	25	0.16	27.39	0.7775	87.7	75	125			
Cadmium	24	0.11	27.39	0	88.6	75	125			
Chromium	31	0.33	27.39	7.019	87.8	75	125			
Cobalt	26	0.33	27.39	4.480	79.4	75	125			
Nickel	29	0.55	27.39	7.061	80.2	75	125			
Selenium	21	2.7	27.39	0	78.1	75	125			
Silver	4.9	0.27	5.479	0	89.7	75	125			
Vanadium	36	2.7	27.39	12.52	86.8	75	125			
Zinc	37	2.7	27.39	13.76	83.9	75	125			

Sample ID **1505570-001BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-14 (6-8')** Batch ID: **19259** RunNo: **26236**
Prep Date: **5/15/2015** Analysis Date: **5/16/2015** SeqNo: **778692** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	2.9	28.67	0.8732	84.9	75	125	3.62	20	
Beryllium	26	0.17	28.67	0.7775	87.6	75	125	4.31	20	
Cadmium	25	0.11	28.67	0	87.2	75	125	2.90	20	
Chromium	32	0.34	28.67	7.019	85.5	75	125	1.46	20	
Cobalt	27	0.34	28.67	4.480	78.6	75	125	2.89	20	
Nickel	30	0.57	28.67	7.061	78.6	75	125	1.91	20	
Selenium	22	2.9	28.67	0	77.9	75	125	4.33	20	
Silver	5.1	0.29	5.733	0	88.3	75	125	3.06	20	
Vanadium	37	2.9	28.67	12.52	85.5	75	125	2.03	20	
Zinc	38	2.9	28.67	13.76	84.2	75	125	3.08	20	

Sample ID **1505570-001BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-14 (6-8')** Batch ID: **19259** RunNo: **26236**
Prep Date: **5/15/2015** Analysis Date: **5/16/2015** SeqNo: **778694** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	9.1	5.5	27.39	0	33.2	75	125			S

Sample ID **1505570-001BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-14 (6-8')** Batch ID: **19259** RunNo: **26236**
Prep Date: **5/15/2015** Analysis Date: **5/16/2015** SeqNo: **778695** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	9.5	5.7	28.67	0	33.3	75	125	4.69	20	S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **1505570-001BMS** SampType: **MS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-14 (6-8')** Batch ID: **19259** RunNo: **26236**
Prep Date: **5/15/2015** Analysis Date: **5/16/2015** SeqNo: **779832** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	24	0.27	27.39	3.555	75.2	75	125			

Sample ID **1505570-001BMSD** SampType: **MSD** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SWMU 10-14 (6-8')** Batch ID: **19259** RunNo: **26236**
Prep Date: **5/15/2015** Analysis Date: **5/16/2015** SeqNo: **779833** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	25	0.29	28.67	3.555	74.4	75	125	2.94	20	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **R26209** RunNo: **26209**
Prep Date: Analysis Date: **5/14/2015** SeqNo: **777629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		98.3	67.4	150			

Sample ID **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **R26209** RunNo: **26209**
Prep Date: Analysis Date: **5/14/2015** SeqNo: **777631** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.6	79.9	135			
Surr: BFB	510		500.0		103	67.4	150			

Sample ID **5mL rb** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **R26221** RunNo: **26221**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **778746** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
BFB	490		500.0		97.2	67.4	150			

Sample ID **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **R26221** RunNo: **26221**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **778747** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.8	79.9	135			
Surr: BFB	480		500.0		96.4	67.4	150			

Sample ID **1505570-002B MS** SampType: **MS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-14 (21-23'** Batch ID: **R26221** RunNo: **26221**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **778749** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	3.3	16.33	0	81.5	65.2	156			
Surr: BFB	360		326.6		110	67.4	150			

Sample ID **1505570-002B MSD** SampType: **MSD** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-14 (21-23'** Batch ID: **R26221** RunNo: **26221**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **778750** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505570**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **1505570-002B MSD** SampType: **MSD** TestCode: **EPA Method 8015D Mod: Gasoline Range**

Client ID: **SWMU 10-14 (21-23'** Batch ID: **R26221** RunNo: **26221**

Prep Date: Analysis Date: **5/15/2015** SeqNo: **778750** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	3.3	16.33	0	79.8	65.2	156	2.13	20	
Surr: BFB	360		326.6		111	67.4	150	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505570 RcptNo: 1

Received by/date: AG 05/12/15

Logged By: Ashley Gallegos 5/12/2015 4:43:00 PM AG

Completed By: Ashley Gallegos 5/13/2015 10:12:37 AM AG

Reviewed By: AT 05/13/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (If applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505570	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
12.15	1000	SOIL	SWMU 10-14 (6-8')	2 JARS	—	-001			✓							✓	✓	✓			
	↓		↓	2 VIALS	MeOH											✓					
	↓		↓	2 VIALS	SOBI											✓					
	1015		SWMU 10-14 (21-23')	2 JARS	—	-002			✓							✓	✓	✓			
	↓		↓	2 VIALS	MeOH											✓					
	↓		↓	2 VIALS	SOBI											✓					
	1200		SWMU 10-11 (4-6')	2 JARS	—	-003			✓							✓	✓	✓			
	↓		↓	2 VIALS	MeOH											✓					
	↓		↓	2 VIALS	SOBI											✓					
	1215		SWMU 10-11 (8-10')	2 JARS	—	-004			✓							✓	✓	✓			
	↓		↓	2 VIALS	MeOH											✓					
↓	↓	↓	↓	2 VIALS	SOBI											✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
12.15	1336	[signature]	[signature]	5-12-15	1836
Date:	Time:	Relinquished by:	Received by:	Date	Time
12-15	1643	[signature]	[signature]	05/12/15	1643

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.3 C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
12.15	1225	SOIL	SWMU 10-11 (18-20')	2 JARS	—	-005			✓							✓	✓	✓			
↓	↓	↓	↓	2 VIALS	MeOH											✓					
				2 VIALS	SOB1											✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
12.15	1336			5-12-	1336
Date:	Time:	Relinquished by:	Received by:	Date	Time
			AMGallegos	05/12/15	1643

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 27, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505617

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 11 sample(s) on 5/13/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 23, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505617**
Date: **10/27/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-12 (6-8')
Collection Date: 5/12/2015 3:45:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/15/2015 9:35:32 AM	19228
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/15/2015 9:35:32 AM	19228
Surr: DNOP	101	0	57.9-140		%REC	1	5/15/2015 9:35:32 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	14	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0034	0.039		mg/Kg-dr	1	5/31/2015 10:42:57 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.0	5.6		mg/Kg-dr	2	5/20/2015 12:42:35 PM	19280
Arsenic	1.9	0.33	2.8	J	mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Barium	1700	0.34	1.1		mg/Kg-dr	10	5/20/2015 1:36:17 PM	19280
Beryllium	1.1	0.0083	0.17		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Chromium	12	0.068	0.34		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Cobalt	5.7	0.043	0.34		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Iron	21000	68	280		mg/Kg-dr	100	5/20/2015 10:36:35 AM	19280
d	3.7	0.12	0.28		mg/Kg-dr	1	5/20/2015 1:46:33 PM	19280
Manganese	470	0.13	0.23		mg/Kg-dr	2	5/20/2015 12:42:35 PM	19280
Nickel	10	0.14	0.56		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Vanadium	21	0.038	2.8		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Zinc	20	0.73	2.8		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benz(a)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-12 (6-8')
Collection Date: 5/12/2015 3:45:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Chloro-3-methylphenol	ND	0.12	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
3,3'-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dichlorophenol	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dimethylphenol	ND	0.091	0.35		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-12 (6-8')
Collection Date: 5/12/2015 3:45:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Surr: 2-Fluorophenol	59.0		26.4-129		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: Phenol-d5	59.9		34.8-118		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: 2,4,6-Tribromophenol	67.1		26.8-128		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: Nitrobenzene-d5	58.5		35.8-124		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: 2-Fluorobiphenyl	58.7		24.5-139		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: 4-Terphenyl-d14	50.9		29.4-129		%REC	1	5/19/2015 9:48:06 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00132	0.000528	0.00234	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Toluene	0.00101	0.000244	0.00234	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Ethylbenzene	ND	0.000394	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Xylenes, Total	ND	0.00140	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000982	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,4-Trimethylbenzene	ND	0.000612	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,3,5-Trimethylbenzene	ND	0.000411	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000628	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000280	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Naphthalene	ND	0.000765	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1-Methylnaphthalene	ND	0.000920	0.00468		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Methylnaphthalene	ND	0.000915	0.00468		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Acetone	0.00766	0.00146	0.0117	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Bromobenzene	ND	0.000652	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-12 (6-8')
Collection Date: 5/12/2015 3:45:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000316	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Bromoform	ND	0.000607	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Bromomethane	ND	0.00138	0.00351		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Butanone	0.00208	0.000750	0.0117	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Carbon tetrachloride	ND	0.000424	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chlorobenzene	ND	0.000237	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chloroethane	ND	0.00234	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chloroform	ND	0.000482	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chloromethane	ND	0.000276	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Chlorotoluene	ND	0.000457	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Carbon disulfide	ND	0.00106	0.0117		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
4-Chlorotoluene	ND	0.000451	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
cis-1,2-DCE	ND	0.000619	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
cis-1,3-Dichloropropene	ND	0.00234	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000688	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Dibromochloromethane	ND	0.000263	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Dibromomethane	ND	0.00133	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dichlorobenzene	ND	0.000520	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,3-Dichlorobenzene	ND	0.000397	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,4-Dichlorobenzene	ND	0.000368	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Dichlorodifluoromethane	ND	0.000956	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1-Dichloroethane	ND	0.000547	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1-Dichloroethene	ND	0.000391	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dichloropropane	ND	0.000500	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,3-Dichloropropane	ND	0.000365	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2,2-Dichloropropane	ND	0.000407	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1-Dichloropropene	ND	0.000429	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Hexachlorobutadiene	ND	0.000473	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Isopropylbenzene	ND	0.000543	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
4-Isopropyltoluene	ND	0.000909	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Methylene chloride	ND	0.000579	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
n-Butylbenzene	ND	0.000961	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Hexanone	ND	0.000487	0.0117		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
n-Propylbenzene	ND	0.000438	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
sec-Butylbenzene	0.000831	0.000591	0.00234	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Styrene	ND	0.000388	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
4-Methyl-2-pentanone	ND	0.000989	0.0117		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
tert-Butylbenzene	ND	0.000359	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000381	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-12 (6-8')
Collection Date: 5/12/2015 3:45:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000515	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Tetrachloroethene (PCE)	ND	0.000464	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
trans-1,2-DCE	ND	0.000379	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
trans-1,3-Dichloropropene	ND	0.000306	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,3-Trichlorobenzene	ND	0.000857	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,4-Trichlorobenzene	ND	0.000877	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1,1-Trichloroethane	ND	0.000333	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1,2-Trichloroethane	ND	0.00234	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Trichloroethene (TCE)	ND	0.000465	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Trichlorofluoromethane	ND	0.000473	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,3-Trichloropropane	ND	0.000822	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Vinyl chloride	ND	0.000267	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Surr: 1,2-Dichloroethane-d4	99.1	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
Surr: 4-Bromofluorobenzene	98.1	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
Surr: Toluene-d8	82.9	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.77	3.1		mg/Kg-dr	1	5/14/2015 4:25:48 PM	R26209
Surr: BFB	110	0	67.4-150		%REC	1	5/14/2015 4:25:48 PM	R26209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-12 (20-22')
Collection Date: 5/12/2015 4:00:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/15/2015 9:56:50 AM	19228
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/15/2015 9:56:50 AM	19228
Surr: DNOP	98.0	0	57.9-140		%REC	1	5/15/2015 9:56:50 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	8.9	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0032	0.036		mg/Kg-dr	1	5/31/2015 10:44:44 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Arsenic	2.0	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Barium	500	0.065	0.22		mg/Kg-dr	2	5/20/2015 12:45:15 PM	19280
Beryllium	0.94	0.0081	0.16		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Chromium	14	0.066	0.33		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Cobalt	9.1	0.041	0.33		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Iron	20000	66	270		mg/Kg-dr	100	5/20/2015 10:37:56 AM	19280
d	1.8	0.12	0.27		mg/Kg-dr	1	5/20/2015 1:41:21 PM	19280
Manganese	1300	0.32	0.55		mg/Kg-dr	5	5/20/2015 1:42:46 PM	19280
Nickel	16	0.14	0.55		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Vanadium	25	0.037	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Zinc	28	0.71	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-002 **Matrix:** SOIL

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
[illegible]-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
[illegible]-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
3,3'-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
N-Nitrosodiphenylamine	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Phenanthrene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Phenol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Surr: 2-Fluorophenol	80.5		26.4-129		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: Phenol-d5	78.5		34.8-118		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: 2,4,6-Tribromophenol	79.0		26.8-128		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: Nitrobenzene-d5	74.7		35.8-124		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: 2-Fluorobiphenyl	74.7		24.5-139		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: 4-Terphenyl-d14	65.8		29.4-129		%REC	1	5/19/2015 10:16:14 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0154	0.000621	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Toluene	0.0101	0.000287	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Ethylbenzene	0.00249	0.000463	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Xylenes, Total	0.00583	0.00164	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.00116	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,4-Trimethylbenzene	0.00203	0.000720	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,3,5-Trimethylbenzene	0.00134	0.000483	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000738	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000329	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Naphthalene	ND	0.000900	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1-Methylnaphthalene	ND	0.00108	0.00551		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Methylnaphthalene	ND	0.00108	0.00551		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Acetone	0.00740	0.00172	0.0138	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Bromobenzene	ND	0.000767	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221

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Lab ID: 1505617-002 **Matrix:** SOIL

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000372	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Bromoform	ND	0.000714	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Bromomethane	ND	0.00163	0.00413		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Butanone	0.00234	0.000882	0.0138	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Carbon tetrachloride	ND	0.000499	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chlorobenzene	ND	0.000279	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chloroethane	ND	0.00276	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chloroform	ND	0.000568	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chloromethane	ND	0.000325	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Chlorotoluene	ND	0.000538	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Carbon disulfide	ND	0.00125	0.0138		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
4-Chlorotoluene	ND	0.000531	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
cis-1,2-DCE	ND	0.000729	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
cis-1,3-Dichloropropene	ND	0.00276	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000809	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Dibromochloromethane	ND	0.000309	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Dibromomethane	ND	0.00156	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dichlorobenzene	ND	0.000611	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,3-Dichlorobenzene	ND	0.000467	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,4-Dichlorobenzene	ND	0.000433	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Dichlorodifluoromethane	ND	0.00112	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1-Dichloroethane	ND	0.000644	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1-Dichloroethene	ND	0.000460	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dichloropropane	ND	0.000589	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,3-Dichloropropane	ND	0.000429	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2,2-Dichloropropane	ND	0.000479	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1-Dichloropropene	ND	0.000505	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Hexachlorobutadiene	ND	0.000556	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Isopropylbenzene	ND	0.000639	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
4-Isopropyltoluene	ND	0.00107	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Methylene chloride	ND	0.000681	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
n-Butylbenzene	ND	0.00113	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Hexanone	ND	0.000573	0.0138		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
n-Propylbenzene	ND	0.000516	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
sec-Butylbenzene	0.000964	0.000696	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Styrene	ND	0.000457	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
4-Methyl-2-pentanone	ND	0.00116	0.0138		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
tert-Butylbenzene	ND	0.000422	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000448	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221

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METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000606	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Tetrachloroethene (PCE)	ND	0.000546	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
trans-1,2-DCE	ND	0.000445	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
trans-1,3-Dichloropropene	ND	0.000360	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,3-Trichlorobenzene	ND	0.00101	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,4-Trichlorobenzene	ND	0.00103	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1,1-Trichloroethane	ND	0.000392	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1,2-Trichloroethane	ND	0.00276	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Trichloroethene (TCE)	ND	0.000547	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Trichlorofluoromethane	ND	0.000557	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,3-Trichloropropane	ND	0.000967	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Vinyl chloride	ND	0.000315	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Surr: 1,2-Dichloroethane-d4	89.5	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
Surr: 4-Bromofluorobenzene	93.4	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
Surr: Dibromofluoromethane	92.7	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
Surr: Toluene-d8	86.5	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
soline Range Organics (GRO)	2.4	0.90	3.6	J	mg/Kg-dr	1	5/14/2015 4:54:30 PM	R26209
Surr: BFB	106	0	67.4-150		%REC	1	5/14/2015 4:54:30 PM	R26209

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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (2-4')
Collection Date: 5/13/2015 9:15:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.7		mg/Kg-dr	1	5/15/2015 10:18:19 AM	19228
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/15/2015 10:18:19 AM	19228
Surr: DNOP	109	0	57.9-140		%REC	1	5/15/2015 10:18:19 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	6.0	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0030	0.034		mg/Kg-dr	1	5/31/2015 10:46:31 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Arsenic	1.3	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Barium	260	0.032	0.11		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Beryllium	0.71	0.0080	0.16		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Chromium	7.8	0.065	0.33		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Cobalt	4.0	0.041	0.33		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Iron	15000	65	270		mg/Kg-dr	100	5/20/2015 10:39:17 AM	19280
d	2.9	0.12	0.27		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
anganese	390	0.13	0.22		mg/Kg-dr	2	5/20/2015 12:51:54 PM	19280
Nickel	6.5	0.14	0.54		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Vanadium	19	0.036	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Zinc	13	0.70	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Acenaphthylene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Aniline	ND	0.092	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Anthracene	ND	0.090	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Azobenzene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benz(a)anthracene	ND	0.083	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(a)pyrene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(g,h,i)perylene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzoic acid	ND	0.060	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzyl alcohol	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (2-4')
Collection Date: 5/13/2015 9:15:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.081	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Bromophenyl phenyl ether	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Butyl benzyl phthalate	ND	0.13	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Carbazole	ND	0.098	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Chloro-3-methylphenol	ND	0.10	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Chloroaniline	ND	0.098	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Chloronaphthalene	ND	0.11	0.26		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Chlorophenol	ND	0.098	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Chrysene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Di-n-butyl phthalate	ND	0.12	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Di-n-octyl phthalate	ND	0.12	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Dibenz(a,h)anthracene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Dibenzofuran	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,2-Dichlorobenzene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,3-Dichlorobenzene	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Dichlorobenzene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
3,3'-Dichlorobenzidine	ND	0.081	0.26		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Diethyl phthalate	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Dimethyl phthalate	ND	0.097	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dichlorophenol	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dimethylphenol	ND	0.083	0.32		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.057	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dinitrophenol	ND	0.044	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dinitrotoluene	ND	0.094	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Fluoranthene	ND	0.13	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Fluorene	ND	0.14	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachlorobenzene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachlorobutadiene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachlorocyclopentadiene	ND	0.073	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachloroethane	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Isophorone	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1-Methylnaphthalene	ND	0.098	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Methylnaphthalene	ND	0.096	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Methylphenol	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (2-4')
Collection Date: 5/13/2015 9:15:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
N-Nitrosodiphenylamine	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Naphthalene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Nitroaniline	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
3-Nitroaniline	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Nitroaniline	ND	0.095	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Nitrobenzene	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Nitrophenol	ND	0.095	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Nitrophenol	ND	0.091	0.26		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Pentachlorophenol	ND	0.066	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Phenanthrene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Phenol	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Pyrene	ND	0.14	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Pyridine	ND	0.089	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4,5-Trichlorophenol	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4,6-Trichlorophenol	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Surr: 2-Fluorophenol	66.4		26.4-129		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: Phenol-d5	70.0		34.8-118		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: 2,4,6-Tribromophenol	74.7		26.8-128		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: Nitrobenzene-d5	70.4		35.8-124		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: 2-Fluorobiphenyl	69.0		24.5-139		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: 4-Terphenyl-d14	67.3		29.4-129		%REC	1	5/19/2015 10:44:10 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.000909	0.000561	0.00249	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Toluene	0.000885	0.000259	0.00249	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Ethylbenzene	ND	0.000419	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Xylenes, Total	ND	0.00149	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.00104	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,4-Trimethylbenzene	ND	0.000651	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,3,5-Trimethylbenzene	ND	0.000437	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000668	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000298	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Naphthalene	ND	0.000814	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1-Methylnaphthalene	ND	0.000979	0.00498		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Methylnaphthalene	ND	0.000974	0.00498		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Acetone	0.0451	0.00156	0.0125		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Bromobenzene	ND	0.000693	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-003 **Matrix:** SOIL

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Collection Date: 5/13/2015 9:15:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000337	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Bromoform	ND	0.000646	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Bromomethane	ND	0.00147	0.00374		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Butanone	0.00424	0.000798	0.0125	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Carbon tetrachloride	ND	0.000451	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chlorobenzene	ND	0.000253	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chloroethane	ND	0.00249	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chloroform	ND	0.000513	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chloromethane	ND	0.000294	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Chlorotoluene	ND	0.000486	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Carbon disulfide	ND	0.00113	0.0125		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
4-Chlorotoluene	ND	0.000480	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
cis-1,2-DCE	ND	0.000659	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
cis-1,3-Dichloropropene	ND	0.00249	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000732	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Dibromochloromethane	ND	0.000279	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Dibromomethane	ND	0.00141	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
[illegible]-Dichlorobenzene	ND	0.000553	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
-Dichlorobenzene	ND	0.000422	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,4-Dichlorobenzene	ND	0.000391	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Dichlorodifluoromethane	ND	0.00102	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1-Dichloroethane	ND	0.000582	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1-Dichloroethene	ND	0.000416	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dichloropropane	ND	0.000532	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,3-Dichloropropane	ND	0.000388	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2,2-Dichloropropane	ND	0.000433	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1-Dichloropropene	ND	0.000456	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Hexachlorobutadiene	ND	0.000503	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Isopropylbenzene	ND	0.000578	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
4-Isopropyltoluene	ND	0.000967	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Methylene chloride	0.000685	0.000616	0.00249	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
n-Butylbenzene	ND	0.00102	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Hexanone	0.000962	0.000518	0.0125	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
n-Propylbenzene	ND	0.000466	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
sec-Butylbenzene	ND	0.000629	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Styrene	ND	0.000413	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
4-Methyl-2-pentanone	ND	0.00105	0.0125		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
tert-Butylbenzene	ND	0.000382	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000405	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (2-4')
Collection Date: 5/13/2015 9:15:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000548	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Tetrachloroethene (PCE)	ND	0.000494	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
trans-1,2-DCE	ND	0.000403	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
trans-1,3-Dichloropropene	ND	0.000326	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,3-Trichlorobenzene	ND	0.000912	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,4-Trichlorobenzene	ND	0.000934	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1,1-Trichloroethane	ND	0.000354	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1,2-Trichloroethane	ND	0.00249	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Trichloroethene (TCE)	ND	0.000495	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Trichlorofluoromethane	ND	0.000503	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,3-Trichloropropane	ND	0.000875	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Vinyl chloride	ND	0.000285	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Surr: 1,2-Dichloroethane-d4	91.4	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
Surr: 4-Bromofluorobenzene	109	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
Surr: Dibromofluoromethane	92.4	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
Surr: Toluene-d8	92.5	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.81	3.2		mg/Kg-dr	1	5/14/2015 5:23:16 PM	R26209
Surr: BFB	114	0	67.4-150		%REC	1	5/14/2015 5:23:16 PM	R26209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (6-8')
Collection Date: 5/13/2015 9:25:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	2300	55	100		mg/Kg-dr	10	5/15/2015 10:39:26 AM	19228
Motor Oil Range Organics (MRO)	ND	500	500		mg/Kg-dr	10	5/15/2015 10:39:26 AM	19228
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/15/2015 10:39:26 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	15	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0034	0.039		mg/Kg-dr	1	5/31/2015 10:48:18 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.1	6.0		mg/Kg-dr	2	5/20/2015 12:54:24 PM	19280
Arsenic	1.3	0.35	3.0	J	mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Barium	200	0.036	0.12		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Beryllium	1.2	0.0088	0.18		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Chromium	11	0.072	0.36		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Cobalt	5.9	0.045	0.36		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Iron	18000	72	300		mg/Kg-dr	100	5/20/2015 10:44:51 AM	19280
d	5.2	0.13	0.30		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Manganese	190	0.070	0.12		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Nickel	11	0.15	0.60		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Vanadium	19	0.040	3.0		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Zinc	17	0.77	3.0		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (6-8')
Collection Date: 5/13/2015 9:25:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
3,3'-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dimethylphenol	ND	0.093	0.35		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Fluorene	1.1	0.16	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1-Methylnaphthalene	12	0.55	1.2		mg/Kg-dr	5	5/21/2015 5:50:19 PM	19270
2-Methylnaphthalene	21	0.54	1.2		mg/Kg-dr	5	5/21/2015 5:50:19 PM	19270
2-Methylphenol	2.2	0.12	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (6-8')
Collection Date: 5/13/2015 9:25:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	0.79	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Naphthalene	3.9	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Phenanthrene	2.3	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Phenol	0.91	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
' 6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Surr: 2-Fluorophenol	61.6		26.4-129		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: Phenol-d5	61.3		34.8-118		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: 2,4,6-Tribromophenol	29.6		26.8-128		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: Nitrobenzene-d5	69.1		35.8-124		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: 2-Fluorobiphenyl	57.5		24.5-139		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: 4-Terphenyl-d14	58.2		29.4-129		%REC	1	5/21/2015 5:22:36 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0050	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Toluene	0.11	0.0040	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Ethylbenzene	1.3	0.0031	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0048	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2,4-Trimethylbenzene	5.2	0.017	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,3,5-Trimethylbenzene	1.9	0.022	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.013	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0027	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Naphthalene	3.8	0.080	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1-Methylnaphthalene	11	0.20	1.3		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
2-Methylnaphthalene	20	0.22	1.3		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Acetone	ND	0.025	0.51		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Bromobenzene	ND	0.025	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Bromodichloromethane	ND	0.0028	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (6-8')
Collection Date: 5/13/2015 9:25:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.027	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Bromomethane	0.023	0.0065	0.10	J	mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
2-Butanone	ND	0.022	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Carbon disulfide	ND	0.024	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Carbon tetrachloride	ND	0.0033	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chlorobenzene	ND	0.0026	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chloroethane	ND	0.026	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chloroform	ND	0.0035	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chloromethane	ND	0.0039	0.10		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
2-Chlorotoluene	ND	0.038	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
4-Chlorotoluene	ND	0.026	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
cis-1,2-DCE	ND	0.0043	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
cis-1,3-Dichloropropene	ND	0.0023	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.058	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Dibromochloromethane	ND	0.0025	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Dibromomethane	ND	0.0036	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dichlorobenzene	ND	0.020	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
·Dichlorobenzene	ND	0.040	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
,-Dichlorobenzene	ND	0.042	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Dichlorodifluoromethane	ND	0.0085	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1-Dichloroethane	ND	0.013	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1-Dichloroethene	ND	0.0023	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dichloropropane	ND	0.0019	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,3-Dichloropropane	ND	0.0046	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
2,2-Dichloropropane	ND	0.0049	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1-Dichloropropene	ND	0.0050	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Hexachlorobutadiene	ND	0.047	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
2-Hexanone	ND	0.0083	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Isopropylbenzene	0.67	0.028	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
4-Isopropyltoluene	0.37	0.024	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
4-Methyl-2-pentanone	ND	0.0059	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Methylene chloride	ND	0.013	0.10		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
n-Butylbenzene	0.58	0.029	1.0	J	mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
n-Propylbenzene	0.86	0.025	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
sec-Butylbenzene	0.36	0.048	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Styrene	ND	0.0062	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
tert-Butylbenzene	ND	0.039	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.0028	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.041	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-004 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (6-8')
Collection Date: 5/13/2015 9:25:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.0029	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
trans-1,2-DCE	ND	0.0022	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
trans-1,3-Dichloropropene	ND	0.0061	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2,3-Trichlorobenzene	ND	0.072	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,2,4-Trichlorobenzene	ND	0.062	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,1,1-Trichloroethane	ND	0.0051	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1,2-Trichloroethane	ND	0.0041	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Trichloroethene (TCE)	ND	0.0033	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Trichlorofluoromethane	ND	0.010	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2,3-Trichloropropane	ND	0.057	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Vinyl chloride	ND	0.013	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Xylenes, Total	5.0	0.0093	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Surr: Dibromofluoromethane	92.8		70-130		%REC	1	5/14/2015 2:01:32 PM	R26209
Surr: 1,2-Dichloroethane-d4	110		70-130		%REC	1	5/14/2015 2:01:32 PM	R26209
Surr: Toluene-d8	83.2		70-130		%REC	1	5/14/2015 2:01:32 PM	R26209
Surr: 4-Bromofluorobenzene	73.0		70-130		%REC	10	5/15/2015 12:48:52 PM	R26221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
:oline Range Organics (GRO)	320	8.5	34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Surr: BFB	101	0	67.4-150		%REC	10	5/15/2015 12:48:52 PM	R26221

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (18-20')
Collection Date: 5/13/2015 9:35:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	9.9		mg/Kg-dr	1	5/15/2015 11:00:42 AM	19228
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/15/2015 11:00:42 AM	19228
Surr: DNOP	101	0	57.9-140		%REC	1	5/15/2015 11:00:42 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	9.1	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0031	0.036		mg/Kg-dr	1	5/31/2015 10:50:07 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	2.8	5.4		mg/Kg-dr	2	5/20/2015 12:57:00 PM	19280
Arsenic	1.2	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Barium	110	0.032	0.11		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Beryllium	1.1	0.0080	0.16		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Chromium	15	0.065	0.32		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Cobalt	6.3	0.041	0.32		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Iron	23000	65	270		mg/Kg-dr	100	5/20/2015 10:46:12 AM	19280
d	2.3	0.12	0.27		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Manganese	430	0.13	0.22		mg/Kg-dr	2	5/20/2015 12:57:00 PM	19280
Nickel	15	0.14	0.54		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Vanadium	15	0.036	2.7		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Zinc	21	0.70	2.7		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Aniline	ND	0.095	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(g,h,i)perylene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzoic acid	ND	0.062	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzyl alcohol	ND	0.097	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (18-20')
Collection Date: 5/13/2015 9:35:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Chloronaphthalene	ND	0.12	0.27		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1,2-Dichlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
[illegible]-Dichlorobenzene	ND	0.097	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
[illegible]-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
3,3'-Dichlorobenzidine	ND	0.084	0.27		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (18-20')
Collection Date: 5/13/2015 9:35:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
N-Nitrosodiphenylamine	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Nitroaniline	ND	0.098	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Nitrophenol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Nitrophenol	ND	0.094	0.27		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Pentachlorophenol	ND	0.068	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Phenanthrene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Phenol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Surr: 2-Fluorophenol	64.5		26.4-129		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: Phenol-d5	67.6		34.8-118		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: 2,4,6-Tribromophenol	67.0		26.8-128		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: Nitrobenzene-d5	67.1		35.8-124		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: 2-Fluorobiphenyl	65.2		24.5-139		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: 4-Terphenyl-d14	58.3		29.4-129		%REC	1	5/19/2015 11:12:10 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0194	0.000509	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Toluene	0.00936	0.000235	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Ethylbenzene	0.00216	0.000380	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Xylenes, Total	0.00769	0.00135	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000947	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,4-Trimethylbenzene	0.00230	0.000590	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,3,5-Trimethylbenzene	0.00154	0.000396	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000605	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000270	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Naphthalene	0.000791	0.000738	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1-Methylnaphthalene	ND	0.000887	0.00452		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Methylnaphthalene	ND	0.000883	0.00452		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Acetone	0.00217	0.00141	0.0113	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Bromobenzene	ND	0.000629	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (18-20')
Collection Date: 5/13/2015 9:35:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000305	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Bromoform	ND	0.000585	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Bromomethane	ND	0.00134	0.00339		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Butanone	0.00181	0.000723	0.0113	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Carbon tetrachloride	ND	0.000409	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chlorobenzene	ND	0.000229	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chloroethane	ND	0.00226	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chloroform	ND	0.000465	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chloromethane	ND	0.000266	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Chlorotoluene	ND	0.000441	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Carbon disulfide	ND	0.00102	0.0113		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
4-Chlorotoluene	ND	0.000435	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
cis-1,2-DCE	ND	0.000598	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
cis-1,3-Dichloropropene	ND	0.00226	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000664	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Dibromochloromethane	ND	0.000253	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Dibromomethane	ND	0.00128	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dichlorobenzene	ND	0.000501	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,3-Dichlorobenzene	ND	0.000383	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,4-Dichlorobenzene	ND	0.000355	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Dichlorodifluoromethane	ND	0.000922	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1-Dichloroethane	ND	0.000528	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1-Dichloroethene	ND	0.000377	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dichloropropane	ND	0.000483	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,3-Dichloropropane	ND	0.000352	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2,2-Dichloropropane	ND	0.000393	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1-Dichloropropene	ND	0.000414	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Hexachlorobutadiene	ND	0.000456	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Isopropylbenzene	ND	0.000524	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
4-Isopropyltoluene	ND	0.000877	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Methylene chloride	0.000655	0.000558	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
n-Butylbenzene	ND	0.000928	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Hexanone	ND	0.000470	0.0113		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
n-Propylbenzene	ND	0.000423	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
sec-Butylbenzene	0.000813	0.000571	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Styrene	ND	0.000374	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
4-Methyl-2-pentanone	ND	0.000954	0.0113		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
tert-Butylbenzene	ND	0.000346	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000368	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-005 **Matrix:** SOIL

Client Sample ID: SWMU 10-13 (18-20')
Collection Date: 5/13/2015 9:35:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000497	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Tetrachloroethene (PCE)	ND	0.000448	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
trans-1,2-DCE	ND	0.000365	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
trans-1,3-Dichloropropene	ND	0.000295	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,3-Trichlorobenzene	ND	0.000827	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,4-Trichlorobenzene	ND	0.000847	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1,1-Trichloroethane	ND	0.000321	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1,2-Trichloroethane	ND	0.00226	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Trichloroethene (TCE)	ND	0.000449	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Trichlorofluoromethane	ND	0.000456	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,3-Trichloropropane	ND	0.000793	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Vinyl chloride	ND	0.000258	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Surr: 1,2-Dichloroethane-d4	90.1	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
Surr: 4-Bromofluorobenzene	98.3	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
Surr: Dibromofluoromethane	93.3	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
Surr: Toluene-d8	86.7	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.93	3.7		mg/Kg-dr	1	5/14/2015 5:51:59 PM	R26209
Surr: BFB	106	0	67.4-150		%REC	1	5/14/2015 5:51:59 PM	R26209

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (2-4')
Collection Date: 5/13/2015 11:15:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/15/2015 11:44:41 AM	19228
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/15/2015 11:44:41 AM	19228
Surr: DNOP	103	0	57.9-140		%REC	1	5/15/2015 11:44:41 AM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	16	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0033	0.038		mg/Kg-dr	1	5/31/2015 10:55:38 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.6	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Arsenic	1.1	0.36	3.1	J	mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Barium	52	0.037	0.12		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Beryllium	1.0	0.0091	0.18		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Cadmium	ND	0.034	0.12		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Chromium	9.2	0.074	0.37		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Cobalt	4.7	0.047	0.37		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Iron	15000	74	310		mg/Kg-dr	100	5/20/2015 10:47:34 AM	19280
d	5.1	0.13	0.31		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Manganese	490	0.14	0.25		mg/Kg-dr	2	5/20/2015 12:59:37 PM	19280
Nickel	8.7	0.16	0.62		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Selenium	ND	1.9	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Silver	ND	0.037	0.31		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Vanadium	17	0.041	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Zinc	15	0.79	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(g,h,i)perylene	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzoic acid	ND	0.068	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzyl alcohol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (2-4')
Collection Date: 5/13/2015 11:15:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.091	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Di-n-butyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Di-n-octyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,3-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
3,3'-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dichlorophenol	ND	0.12	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dimethylphenol	ND	0.093	0.36		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.065	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Methylphenol	ND	0.12	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (2-4')
Collection Date: 5/13/2015 11:15:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Nitroaniline	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Nitroaniline	ND	0.11	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Pentachlorophenol	ND	0.074	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Pyridine	ND	0.10	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Surr: 2-Fluorophenol	87.1		26.4-129		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: Phenol-d5	87.6		34.8-118		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: 2,4,6-Tribromophenol	85.4		26.8-128		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: Nitrobenzene-d5	92.0		35.8-124		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: 2-Fluorobiphenyl	81.8		24.5-139		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: 4-Terphenyl-d14	68.4		29.4-129		%REC	1	5/19/2015 11:39:50 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00119	0.000432	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Toluene	0.00109	0.000199	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Ethylbenzene	0.000345	0.000322	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Xylenes, Total	0.00141	0.00114	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Methyl tert-butyl ether (MTBE)	0.00478	0.000803	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,4-Trimethylbenzene	ND	0.000501	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,3,5-Trimethylbenzene	ND	0.000336	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000513	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000229	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Naphthalene	ND	0.000626	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1-Methylnaphthalene	ND	0.000752	0.00383		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Methylnaphthalene	ND	0.000749	0.00383		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Acetone	0.00666	0.00120	0.00958	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Bromobenzene	ND	0.000533	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (2-4')
Collection Date: 5/13/2015 11:15:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000259	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Bromoform	ND	0.000496	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Bromomethane	ND	0.00113	0.00287		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Butanone	ND	0.000614	0.00958		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Carbon tetrachloride	ND	0.000347	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chlorobenzene	ND	0.000194	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chloroform	ND	0.000395	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chloromethane	ND	0.000226	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Chlorotoluene	ND	0.000374	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Carbon disulfide	0.000968	0.000867	0.00958	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
4-Chlorotoluene	ND	0.000369	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
cis-1,2-DCE	ND	0.000507	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
cis-1,3-Dichloropropene	ND	0.00192	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000563	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Dibromochloromethane	ND	0.000215	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Dibromomethane	ND	0.00109	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dichlorobenzene	ND	0.000425	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,3-Dichlorobenzene	ND	0.000325	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,4-Dichlorobenzene	ND	0.000301	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Dichlorodifluoromethane	ND	0.000782	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1-Dichloroethane	ND	0.000448	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1-Dichloroethene	ND	0.000320	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dichloropropane	ND	0.000409	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,3-Dichloropropane	ND	0.000298	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2,2-Dichloropropane	ND	0.000333	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1-Dichloropropene	ND	0.000351	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Hexachlorobutadiene	ND	0.000387	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Isopropylbenzene	ND	0.000445	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
4-Isopropyltoluene	ND	0.000744	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Methylene chloride	0.000498	0.000473	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
n-Butylbenzene	ND	0.000787	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Hexanone	ND	0.000399	0.00958		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
n-Propylbenzene	ND	0.000359	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
sec-Butylbenzene	0.000632	0.000484	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Styrene	ND	0.000318	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
4-Methyl-2-pentanone	ND	0.000809	0.00958		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
tert-Butylbenzene	ND	0.000294	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000312	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-006 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (2-4')
Collection Date: 5/13/2015 11:15:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000421	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Tetrachloroethene (PCE)	ND	0.000380	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
trans-1,2-DCE	ND	0.000310	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
trans-1,3-Dichloropropene	ND	0.000251	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,3-Trichlorobenzene	ND	0.000701	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,4-Trichlorobenzene	ND	0.000718	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1,1-Trichloroethane	ND	0.000273	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1,2-Trichloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Trichloroethene (TCE)	ND	0.000381	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Trichlorofluoromethane	ND	0.000387	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,3-Trichloropropane	ND	0.000673	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Vinyl chloride	ND	0.000219	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
Surr: 4-Bromofluorobenzene	95.2	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
Surr: Toluene-d8	82.0	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.74	3.0		mg/Kg-dr	1	5/14/2015 6:20:45 PM	R26209
Surr: BFB	110	0	67.4-150		%REC	1	5/14/2015 6:20:45 PM	R26209

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-007 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (4-6')
Collection Date: 5/13/2015 11:25:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.3	9.7		mg/Kg-dr	1	5/15/2015 12:05:56 PM	19228
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/15/2015 12:05:56 PM	19228
Surr: DNOP	107	0	57.9-140		%REC	1	5/15/2015 12:05:56 PM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	15	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0032	0.036		mg/Kg-dr	1	5/31/2015 10:58:11 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Arsenic	1.3	0.33	2.8	J	mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Barium	120	0.034	0.11		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Beryllium	1.0	0.0084	0.17		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Chromium	9.1	0.068	0.34		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Cobalt	4.6	0.043	0.34		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Iron	17000	68	280		mg/Kg-dr	100	5/20/2015 10:48:56 AM	19280
[illegible]	3.7	0.12	0.28		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Manganese	200	0.066	0.11		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Nickel	8.3	0.15	0.57		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Vanadium	15	0.038	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Zinc	15	0.73	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Anthracene	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benz(a)anthracene	ND	0.092	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-007 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (4-6')
Collection Date: 5/13/2015 11:25:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Bis(2-chloroisopropyl)ether	ND	0.090	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Dibenzofuran	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
3,3'-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachlorobutadiene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachlorocyclopentadiene	ND	0.081	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Isophorone	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-007 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (4-6')
Collection Date: 5/13/2015 11:25:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Phenol	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4,6-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Surr: 2-Fluorophenol	71.9		26.4-129		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: Phenol-d5	76.9		34.8-118		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: 2,4,6-Tribromophenol	89.1		26.8-128		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: Nitrobenzene-d5	68.9		35.8-124		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: 2-Fluorobiphenyl	82.9		24.5-139		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: 4-Terphenyl-d14	78.0		29.4-129		%REC	1	5/20/2015 12:07:52 AM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00144	0.000385	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Toluene	0.00120	0.000178	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Ethylbenzene	0.000367	0.000287	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Xylenes, Total	0.00123	0.00102	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Methyl tert-butyl ether (MTBE)	0.00936	0.000717	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,4-Trimethylbenzene	ND	0.000447	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,3,5-Trimethylbenzene	ND	0.000300	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000458	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000204	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Naphthalene	ND	0.000558	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1-Methylnaphthalene	ND	0.000671	0.00342		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Methylnaphthalene	ND	0.000668	0.00342		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Acetone	0.00320	0.00107	0.00854	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Bromobenzene	ND	0.000475	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-007 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (4-6')
Collection Date: 5/13/2015 11:25:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000231	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Bromoform	ND	0.000443	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Bromomethane	ND	0.00101	0.00256		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Butanone	0.00114	0.000547	0.00854	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Carbon tetrachloride	ND	0.000309	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chlorobenzene	ND	0.000173	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chloroethane	ND	0.00171	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chloroform	ND	0.000352	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chloromethane	ND	0.000201	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Chlorotoluene	ND	0.000334	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Carbon disulfide	ND	0.000773	0.00854		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
4-Chlorotoluene	ND	0.000329	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
cis-1,2-DCE	ND	0.000452	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
cis-1,3-Dichloropropene	ND	0.00171	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000502	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Dibromochloromethane	ND	0.000192	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Dibromomethane	ND	0.000970	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dichlorobenzene	ND	0.000379	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,3-Dichlorobenzene	ND	0.000290	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,4-Dichlorobenzene	ND	0.000268	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Dichlorodifluoromethane	ND	0.000698	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1-Dichloroethane	ND	0.000399	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1-Dichloroethene	ND	0.000285	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dichloropropane	ND	0.000365	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,3-Dichloropropane	ND	0.000266	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2,2-Dichloropropane	ND	0.000297	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1-Dichloropropene	ND	0.000313	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Hexachlorobutadiene	ND	0.000345	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Isopropylbenzene	ND	0.000396	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
4-Isopropyltoluene	ND	0.000663	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Methylene chloride	ND	0.000422	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
n-Butylbenzene	ND	0.000702	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Hexanone	ND	0.000355	0.00854		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
n-Propylbenzene	ND	0.000320	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
sec-Butylbenzene	0.000564	0.000432	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Styrene	ND	0.000283	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
4-Methyl-2-pentanone	ND	0.000722	0.00854		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
tert-Butylbenzene	ND	0.000262	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000278	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-007 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (4-6')
Collection Date: 5/13/2015 11:25:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000376	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Tetrachloroethene (PCE)	ND	0.000339	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
trans-1,2-DCE	ND	0.000276	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
trans-1,3-Dichloropropene	ND	0.000223	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,3-Trichlorobenzene	ND	0.000625	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,4-Trichlorobenzene	ND	0.000640	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1,1-Trichloroethane	ND	0.000243	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1,2-Trichloroethane	ND	0.00171	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Trichloroethene (TCE)	ND	0.000340	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Trichlorofluoromethane	ND	0.000345	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,3-Trichloropropane	ND	0.000600	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Vinyl chloride	ND	0.000195	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Surr: 1,2-Dichloroethane-d4	97.3	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
Surr: 4-Bromofluorobenzene	92.1	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
Surr: Toluene-d8	86.5	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	2.6	10		mg/Kg-dr	1	5/14/2015 6:49:44 PM	R26209
Surr: BFB	108	0	67.4-150		%REC	1	5/14/2015 6:49:44 PM	R26209

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-008 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (18-20')
Collection Date: 5/13/2015 11:40:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.3	9.5		mg/Kg-dr	1	5/15/2015 12:27:11 PM	19228
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/15/2015 12:27:11 PM	19228
Surr: DNOP	97.7	0	57.9-140		%REC	1	5/15/2015 12:27:11 PM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	7.9	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0031	0.035		mg/Kg-dr	1	5/31/2015 11:00:02 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	2.8	5.3		mg/Kg-dr	2	5/20/2015 1:08:38 PM	19280
Arsenic	2.1	0.31	2.7	J	mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Barium	850	0.16	0.53		mg/Kg-dr	5	5/20/2015 1:44:01 PM	19280
Beryllium	1.0	0.0079	0.16		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Chromium	13	0.064	0.32		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Cobalt	7.4	0.040	0.32		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Iron	20000	65	270		mg/Kg-dr	100	5/20/2015 10:50:19 AM	19280
d	1.8	0.12	0.27		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Manganese	980	0.31	0.53		mg/Kg-dr	5	5/20/2015 1:44:01 PM	19280
Nickel	15	0.14	0.53		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Selenium	ND	1.6	2.7		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Vanadium	21	0.036	2.7		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Zinc	23	0.69	2.7		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Aniline	ND	0.094	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Anthracene	ND	0.091	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benz(a)anthracene	ND	0.085	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(g,h,i)perylene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzoic acid	ND	0.061	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzyl alcohol	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-008 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (18-20')
Collection Date: 5/13/2015 11:40:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.082	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Bromophenyl phenyl ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Chloroaniline	ND	0.10	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Chloronaphthalene	ND	0.12	0.27		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Di-n-butyl phthalate	ND	0.12	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Di-n-octyl phthalate	ND	0.12	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1,2-Dichlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
·Dichlorobenzene	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
,-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
3,3'-Dichlorobenzidine	ND	0.083	0.27		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Dimethyl phthalate	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dichlorophenol	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dimethylphenol	ND	0.085	0.32		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.059	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dinitrophenol	ND	0.045	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dinitrotoluene	ND	0.096	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachlorocyclopentadiene	ND	0.075	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachloroethane	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Isophorone	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Methylnaphthalene	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Methylphenol	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-008 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (18-20')
Collection Date: 5/13/2015 11:40:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
N-Nitrosodiphenylamine	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
3-Nitroaniline	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Nitroaniline	ND	0.097	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Nitrobenzene	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Nitrophenol	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Nitrophenol	ND	0.093	0.27		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Pentachlorophenol	ND	0.067	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Phenanthrene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Phenol	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Pyridine	ND	0.091	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4,6-Trichlorophenol	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Surr: 2-Fluorophenol	76.2		26.4-129		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: Phenol-d5	81.1		34.8-118		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: 2,4,6-Tribromophenol	76.6		26.8-128		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: Nitrobenzene-d5	74.5		35.8-124		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: 2-Fluorobiphenyl	78.0		24.5-139		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: 4-Terphenyl-d14	69.6		29.4-129		%REC	1	5/21/2015 1:13:59 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0292	0.000501	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Toluene	0.0204	0.000231	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Ethylbenzene	0.00472	0.000374	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Xylenes, Total	0.0155	0.00133	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000932	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,4-Trimethylbenzene	0.00497	0.000581	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,3,5-Trimethylbenzene	0.00318	0.000390	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000595	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000266	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Naphthalene	0.00109	0.000726	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1-Methylnaphthalene	ND	0.000873	0.00444		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Methylnaphthalene	ND	0.000868	0.00444		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Acetone	0.00238	0.00139	0.0111	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Bromobenzene	ND	0.000618	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-008 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (18-20')
Collection Date: 5/13/2015 11:40:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000300	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Bromoform	ND	0.000576	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Bromomethane	ND	0.00131	0.00333		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Butanone	0.00227	0.000712	0.0111	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Carbon tetrachloride	ND	0.000402	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chlorobenzene	ND	0.000225	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chloroethane	ND	0.00222	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chloroform	ND	0.000458	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chloromethane	ND	0.000262	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Chlorotoluene	ND	0.000434	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Carbon disulfide	ND	0.00101	0.0111		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
4-Chlorotoluene	ND	0.000428	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
cis-1,2-DCE	ND	0.000588	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
cis-1,3-Dichloropropene	ND	0.00222	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000653	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Dibromochloromethane	ND	0.000249	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Dibromomethane	ND	0.00126	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
' ?-Dichlorobenzene	ND	0.000493	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
-Dichlorobenzene	ND	0.000377	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,4-Dichlorobenzene	ND	0.000349	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Dichlorodifluoromethane	ND	0.000907	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1-Dichloroethane	ND	0.000519	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1-Dichloroethene	ND	0.000371	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dichloropropane	ND	0.000475	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,3-Dichloropropane	ND	0.000346	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2,2-Dichloropropane	ND	0.000386	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1-Dichloropropene	ND	0.000407	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Hexachlorobutadiene	ND	0.000448	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Isopropylbenzene	0.000689	0.000516	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
4-Isopropyltoluene	ND	0.000862	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Methylene chloride	ND	0.000549	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
n-Butylbenzene	ND	0.000912	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Hexanone	ND	0.000462	0.0111		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
n-Propylbenzene	0.000889	0.000416	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
sec-Butylbenzene	0.000889	0.000561	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Styrene	ND	0.000368	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
4-Methyl-2-pentanone	ND	0.000938	0.0111		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
tert-Butylbenzene	ND	0.000341	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000362	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-008 **Matrix:** SOIL

Client Sample ID: SWMU 10-15 (18-20')
Collection Date: 5/13/2015 11:40:00 AM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000489	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Tetrachloroethene (PCE)	ND	0.000440	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
trans-1,2-DCE	ND	0.000359	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
trans-1,3-Dichloropropene	ND	0.000291	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,3-Trichlorobenzene	ND	0.000813	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,4-Trichlorobenzene	ND	0.000833	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1,1-Trichloroethane	ND	0.000316	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1,2-Trichloroethane	ND	0.00222	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Trichloroethene (TCE)	ND	0.000442	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Trichlorofluoromethane	ND	0.000449	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,3-Trichloropropane	ND	0.000780	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Vinyl chloride	ND	0.000254	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Surr: 1,2-Dichloroethane-d4	88.8	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
Surr: 4-Bromofluorobenzene	104	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
Surr: Dibromofluoromethane	92.9	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
Surr: Toluene-d8	84.5	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
;oline Range Organics (GRO)	ND	0.94	3.8		mg/Kg-dr	1	5/14/2015 7:18:41 PM	R26209
Surr: BFB	109	0	67.4-150		%REC	1	5/14/2015 7:18:41 PM	R26209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-009 **Matrix:** SOIL

Client Sample ID: SWMU 10-17 (6-8')
Collection Date: 5/13/2015 1:45:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	7800	530	960		mg/Kg-dr	100	5/15/2015 1:39:22 PM	19228
Motor Oil Range Organics (MRO)	ND	4800	4800		mg/Kg-dr	100	5/15/2015 1:39:22 PM	19228
Surr: DNOP	0	0	57.9-140	S	%REC	100	5/15/2015 1:39:22 PM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	13	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0031	0.036		mg/Kg-dr	1	5/31/2015 11:01:52 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	3.1	5.8		mg/Kg-dr	2	5/20/2015 1:11:14 PM	19280
Arsenic	1.5	0.34	2.9	J	mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Barium	200	0.035	0.12		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Beryllium	1.0	0.0086	0.17		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Chromium	11	0.070	0.35		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Cobalt	5.3	0.044	0.35		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Iron	16000	70	290		mg/Kg-dr	100	5/20/2015 10:51:42 AM	19280
d	4.4	0.13	0.29		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Manganese	210	0.068	0.12		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Nickel	9.6	0.15	0.58		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Vanadium	19	0.039	2.9		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Zinc	17	0.75	2.9		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Acenaphthylene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Aniline	ND	0.99	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Anthracene	ND	0.97	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Azobenzene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benz(a)anthracene	ND	0.90	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(a)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(g,h,i)perylene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(k)fluoranthene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzoic acid	ND	0.65	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzyl alcohol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-009 **Matrix:** SOIL

Client Sample ID: SWMU 10-17 (6-8')
Collection Date: 5/13/2015 1:45:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.87	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Bromophenyl phenyl ether	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Butyl benzyl phthalate	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Carbazole	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Chloro-3-methylphenol	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Chloroaniline	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Chloronaphthalene	ND	1.2	2.9		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Chlorophenol	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Chlorophenyl phenyl ether	ND	1.7	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Chrysene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Di-n-butyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Di-n-octyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Dibenz(a,h)anthracene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Dibenzofuran	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,3-Dichlorobenzene	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,4-Dichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
3,3'-Dichlorobenzidine	ND	0.88	2.9		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Diethyl phthalate	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Dimethyl phthalate	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dichlorophenol	ND	1.1	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dimethylphenol	36	0.90	3.4		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.62	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dinitrophenol	ND	0.47	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dinitrotoluene	ND	1.0	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,6-Dinitrotoluene	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Fluoranthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Fluorene	7.1	1.6	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachlorobutadiene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachlorocyclopentadiene	ND	0.79	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachloroethane	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Isophorone	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1-Methylnaphthalene	76	5.3	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
2-Methylnaphthalene	130	5.2	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
2-Methylphenol	56	5.7	23		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-009 **Matrix:** SOIL

Client Sample ID: SWMU 10-17 (6-8')
Collection Date: 5/13/2015 1:45:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	100	5.9	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
N-Nitrosodiphenylamine	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Naphthalene	24	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Nitroaniline	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
3-Nitroaniline	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Nitroaniline	ND	1.0	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Nitrobenzene	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Nitrophenol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Nitrophenol	ND	0.98	2.9		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Pentachlorophenol	ND	0.71	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Phenanthrene	15	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Phenol	52	5.1	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
Pyrene	ND	1.5	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Pyridine	ND	0.96	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,2,4-Trichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4,5-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
[illegible] 6-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
[illegible]urr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 6:18:13 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	1.9	0.094	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Toluene	34	0.076	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Ethylbenzene	11	0.058	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Methyl tert-butyl ether (MTBE)	ND	0.090	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,4-Trimethylbenzene	27	0.032	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,3,5-Trimethylbenzene	10	0.042	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.25	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dibromoethane (EDB)	ND	0.051	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Naphthalene	20	0.15	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1-Methylnaphthalene	48	0.38	2.5		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Methylnaphthalene	87	2.1	13		mg/Kg-dr	100	5/15/2015 1:17:42 PM	R26221
Acetone	ND	0.47	9.5		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Bromobenzene	ND	0.047	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Bromodichloromethane	ND	0.052	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-009 **Matrix:** SOIL

Client Sample ID: SWMU 10-17 (6-8')
Collection Date: 5/13/2015 1:45:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.051	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Bromomethane	ND	0.12	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Butanone	ND	0.41	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Carbon disulfide	ND	0.46	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Carbon tetrachloride	ND	0.062	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chlorobenzene	ND	0.049	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chloroethane	ND	0.49	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chloroform	ND	0.066	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chloromethane	ND	0.073	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Chlorotoluene	ND	0.072	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
4-Chlorotoluene	ND	0.048	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
cis-1,2-DCE	ND	0.080	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
cis-1,3-Dichloropropene	ND	0.044	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dibromo-3-chloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Dibromochloromethane	ND	0.048	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Dibromomethane	ND	0.067	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dichlorobenzene	ND	0.038	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
[illegible]-Dichlorobenzene	ND	0.075	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
[illegible]-Dichlorobenzene	ND	0.079	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Dichlorodifluoromethane	ND	0.16	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1-Dichloroethane	ND	0.25	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1-Dichloroethene	ND	0.044	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dichloropropane	ND	0.035	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,3-Dichloropropane	ND	0.087	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2,2-Dichloropropane	ND	0.092	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1-Dichloropropene	ND	0.095	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Hexachlorobutadiene	ND	0.088	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Hexanone	ND	0.16	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Isopropylbenzene	3.1	0.054	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
4-Isopropyltoluene	1.6	0.045	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
4-Methyl-2-pentanone	ND	0.11	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Methylene chloride	ND	0.25	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
n-Butylbenzene	2.8	0.055	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
n-Propylbenzene	5.2	0.047	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
sec-Butylbenzene	1.8	0.090	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Styrene	ND	0.12	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
tert-Butylbenzene	ND	0.073	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.052	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,2,2-Tetrachloroethane	ND	0.077	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-009 **Matrix:** SOIL

Client Sample ID: SWMU 10-17 (6-8')
Collection Date: 5/13/2015 1:45:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.055	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
trans-1,2-DCE	ND	0.041	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
trans-1,3-Dichloropropene	ND	0.11	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,3-Trichlorobenzene	ND	0.14	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,4-Trichlorobenzene	ND	0.12	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,1-Trichloroethane	ND	0.096	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,2-Trichloroethane	ND	0.076	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Trichloroethene (TCE)	ND	0.062	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Trichlorofluoromethane	ND	0.19	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,3-Trichloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Vinyl chloride	ND	0.25	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Xylenes, Total	86	0.18	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Surr: Dibromofluoromethane	90.0		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
Surr: 1,2-Dichloroethane-d4	99.1		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
Surr: Toluene-d8	99.9		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
Surr: 4-Bromofluorobenzene	102		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
;oline Range Organics (GRO)	1300	16	63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Surr: BFB	106	0	67.4-150		%REC	20	5/15/2015 2:15:21 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-010 **Matrix:** SOIL

Client Sample ID: SWMU 10 DUP04
Collection Date: 5/13/2015
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	3000	54	98		mg/Kg-dr	10	5/15/2015 2:00:39 PM	19228
Motor Oil Range Organics (MRO)	ND	490	490		mg/Kg-dr	10	5/15/2015 2:00:39 PM	19228
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/15/2015 2:00:39 PM	19228
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	13	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	ND	0.0032	0.036		mg/Kg-dr	1	5/31/2015 11:03:43 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Arsenic	1.1	0.34	2.9	J	mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Barium	160	0.035	0.12		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Beryllium	1.1	0.0086	0.17		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Chromium	11	0.070	0.35		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Cobalt	5.4	0.044	0.35		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Iron	16000	70	290		mg/Kg-dr	100	5/20/2015 10:53:06 AM	19280
d	5.3	0.13	0.29		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Manganese	200	0.068	0.12		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Nickel	9.5	0.15	0.58		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Vanadium	19	0.039	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Zinc	17	0.75	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Acenaphthylene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Aniline	ND	0.99	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Anthracene	ND	0.97	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Azobenzene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benz(a)anthracene	ND	0.89	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(a)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(g,h,i)perylene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(k)fluoranthene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzoic acid	ND	0.65	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzyl alcohol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-010 **Matrix:** SOIL

Client Sample ID: SWMU 10 DUP04
Collection Date: 5/13/2015
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.87	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Bromophenyl phenyl ether	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Butyl benzyl phthalate	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Carbazole	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Chloro-3-methylphenol	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Chloroaniline	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Chloronaphthalene	ND	1.2	2.8		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Chlorophenol	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Chlorophenyl phenyl ether	ND	1.7	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Chrysene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Di-n-butyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Di-n-octyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Dibenz(a,h)anthracene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Dibenzofuran	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,3-Dichlorobenzene	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,4-Dichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
3,3'-Dichlorobenzidine	ND	0.87	2.8		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Diethyl phthalate	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Dimethyl phthalate	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dichlorophenol	ND	1.1	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dimethylphenol	18	0.89	3.4		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.62	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dinitrophenol	ND	0.47	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dinitrotoluene	ND	1.0	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,6-Dinitrotoluene	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Fluoranthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Fluorene	3.2	1.5	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachlorobutadiene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachlorocyclopentadiene	ND	0.79	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachloroethane	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Isophorone	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1-Methylnaphthalene	28	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Methylnaphthalene	45	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Methylphenol	29	1.1	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-010 **Matrix:** SOIL

Client Sample ID: SWMU 10 DUP04
Collection Date: 5/13/2015
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	60	5.9	11		mg/Kg-dr	5	5/21/2015 7:41:29 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
N-Nitrosodiphenylamine	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Naphthalene	8.8	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Nitroaniline	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
3-Nitroaniline	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Nitroaniline	ND	1.0	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Nitrobenzene	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Nitrophenol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Nitrophenol	ND	0.98	2.8		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Pentachlorophenol	ND	0.71	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Phenanthrene	6.0	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Phenol	26	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Pyrene	ND	1.5	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Pyridine	ND	0.95	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,2,4-Trichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4,5-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4,6-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 7:13:45 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	1.2	0.095	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Toluene	23	0.076	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Ethylbenzene	8.3	0.059	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Methyl tert-butyl ether (MTBE)	ND	0.091	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,4-Trimethylbenzene	17	0.032	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,3,5-Trimethylbenzene	6.2	0.042	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.26	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dibromoethane (EDB)	ND	0.051	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Naphthalene	13	0.15	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1-Methylnaphthalene	31	0.39	2.6		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Methylnaphthalene	60	0.42	2.6		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Acetone	ND	0.48	9.6		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Bromobenzene	ND	0.048	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Bromodichloromethane	ND	0.053	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-010 **Matrix:** SOIL

Client Sample ID: SWMU 10 DUP04
Collection Date: 5/13/2015
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Bromoform	ND	0.052	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Bromomethane	ND	0.12	1.9		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Butanone	ND	0.41	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Carbon disulfide	ND	0.46	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Carbon tetrachloride	ND	0.063	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chlorobenzene	ND	0.049	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chloroethane	ND	0.50	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chloroform	ND	0.067	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chloromethane	ND	0.074	1.9		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Chlorotoluene	ND	0.073	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
4-Chlorotoluene	ND	0.049	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
cis-1,2-DCE	ND	0.081	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
cis-1,3-Dichloropropene	ND	0.045	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dibromo-3-chloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Dibromochloromethane	ND	0.048	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Dibromomethane	ND	0.068	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dichlorobenzene	ND	0.039	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
[illegible]-Dichlorobenzene	ND	0.076	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
[illegible]-Dichlorobenzene	ND	0.080	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Dichlorodifluoromethane	ND	0.16	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1-Dichloroethane	ND	0.26	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1-Dichloroethene	ND	0.044	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dichloropropane	ND	0.036	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,3-Dichloropropane	ND	0.088	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2,2-Dichloropropane	ND	0.093	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1-Dichloropropene	ND	0.096	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Hexachlorobutadiene	ND	0.089	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Hexanone	ND	0.16	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Isopropylbenzene	2.3	0.054	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
4-Isopropyltoluene	1.1	0.046	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
4-Methyl-2-pentanone	ND	0.11	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Methylene chloride	ND	0.26	1.9		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
n-Butylbenzene	1.9	0.055	1.9	J	mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
n-Propylbenzene	3.3	0.048	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
sec-Butylbenzene	1.0	0.091	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Styrene	ND	0.12	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
tert-Butylbenzene	ND	0.074	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.053	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,2,2-Tetrachloroethane	ND	0.078	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-010 **Matrix:** SOIL

Client Sample ID: SWMU 10 DUP04
Collection Date: 5/13/2015
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Tetrachloroethene (PCE)	ND	0.056	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
trans-1,2-DCE	ND	0.042	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
trans-1,3-Dichloropropene	ND	0.12	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,3-Trichlorobenzene	ND	0.14	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,4-Trichlorobenzene	ND	0.12	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,1-Trichloroethane	ND	0.097	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,2-Trichloroethane	ND	0.077	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Trichloroethene (TCE)	ND	0.063	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Trichlorofluoromethane	ND	0.19	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,3-Trichloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Vinyl chloride	ND	0.26	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Xylenes, Total	65	0.18	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Surr: Dibromofluoromethane	98.2		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
Surr: 1,2-Dichloroethane-d4	101		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
Surr: Toluene-d8	103		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
Surr: 4-Bromofluorobenzene	78.3		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	1100	16	64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Surr: BFB	99.4	0	67.4-150		%REC	20	5/15/2015 2:44:10 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: MeOH Blank
Project: SWMU 10
Collection Date:
Lab ID: 1505617-011
Matrix: MEOH BLAN
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.0074	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Toluene	ND	0.0060	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Ethylbenzene	ND	0.0046	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0071	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,4-Trimethylbenzene	0.0058	0.0025	0.050	J	mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,3,5-Trimethylbenzene	ND	0.0033	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.020	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0040	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Naphthalene	ND	0.012	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1-Methylnaphthalene	ND	0.030	0.20		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Methylnaphthalene	ND	0.033	0.20		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Acetone	ND	0.037	0.75		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromobenzene	ND	0.0037	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromodichloromethane	ND	0.0041	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromoform	ND	0.0040	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromomethane	0.031	0.0097	0.15	J	mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Butanone	ND	0.032	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Carbon disulfide	ND	0.036	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Carbon tetrachloride	ND	0.0049	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chlorobenzene	ND	0.0038	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chloroethane	ND	0.039	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chloroform	ND	0.0052	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chloromethane	ND	0.0058	0.15		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Chlorotoluene	ND	0.0057	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
4-Chlorotoluene	ND	0.0038	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
cis-1,2-DCE	ND	0.0063	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
cis-1,3-Dichloropropene	ND	0.0035	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.0086	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Dibromochloromethane	ND	0.0037	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Dibromomethane	ND	0.0053	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dichlorobenzene	ND	0.0030	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,3-Dichlorobenzene	ND	0.0059	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,4-Dichlorobenzene	ND	0.0062	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Dichlorodifluoromethane	ND	0.013	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1-Dichloroethane	ND	0.020	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1-Dichloroethene	ND	0.0034	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dichloropropane	ND	0.0028	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,3-Dichloropropane	ND	0.0069	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2,2-Dichloropropane	ND	0.0073	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505617-011
Matrix: MEOH BLAN
Client Sample ID: MeOH Blank
Collection Date:
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.0074	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Hexachlorobutadiene	ND	0.0069	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Hexanone	ND	0.012	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Isopropylbenzene	ND	0.0042	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
4-Isopropyltoluene	ND	0.0036	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
4-Methyl-2-pentanone	ND	0.0087	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Methylene chloride	ND	0.020	0.15		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
n-Butylbenzene	ND	0.0043	0.15		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
n-Propylbenzene	ND	0.0037	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
sec-Butylbenzene	ND	0.0071	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Styrene	ND	0.0092	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
tert-Butylbenzene	ND	0.0057	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.0041	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.0061	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Tetrachloroethene (PCE)	ND	0.0043	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
trans-1,2-DCE	ND	0.0032	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
trans-1,3-Dichloropropene	ND	0.0090	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,3-Trichlorobenzene	ND	0.011	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,4-Trichlorobenzene	ND	0.0092	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,1-Trichloroethane	ND	0.0076	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,2-Trichloroethane	ND	0.0060	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Trichloroethene (TCE)	ND	0.0049	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Trichlorofluoromethane	ND	0.015	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,3-Trichloropropane	ND	0.0084	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Vinyl chloride	ND	0.020	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Xylenes, Total	ND	0.014	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Surr: Dibromofluoromethane	101		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
Surr: 1,2-Dichloroethane-d4	102		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
Surr: Toluene-d8	89.8		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
Surr: 4-Bromofluorobenzene	101		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	1.3	5.0		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Surr: BFB	114	0	67.4-150		%REC	1	5/14/2015 7:47:32 PM	R26209

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-01

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-001C SWMU 10-12 6-8FT

Project # :

Collected By :
Collection Date : 05/12/15 15:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	46.		mV	2580 B-2011	05/23/15	1
pH	7.4	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-01 (PH) - 7.4 at 22.2c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-02

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-002C SWMU 10-12 20-22FT

Project # :

Collected By :
Collection Date : 05/12/15 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	37.		mV	2580 B-2011	05/23/15	1
pH	8.4	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-02 (PH) - 8.4 at 22.3c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-03

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-003C SWMU 10-13 2-4FT

Project # :

Collected By :
Collection Date : 05/13/15 09:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	63.		mV	2580 B-2011	05/23/15	1
pH	7.4	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-03 (PH) - 7.4 at 22.3c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-04

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-004C SWMU 10-13 6-8FT

Project # :

Collected By :
Collection Date : 05/13/15 09:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	55.		mV	2580 B-2011	05/23/15	1
pH	8.0	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-04 (PH) - 8.0 at 21.8c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-05

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-005C SWMU 10-13 18-20FT

Project # :

Collected By :
Collection Date : 05/13/15 09:35

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	30.		mV	2580 B-2011	05/23/15	1
pH	8.7	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-05 (PH) - 8.7 at 21.8c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-06

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-006C SWMU 10-15 2-4FT

Project # :

Collected By :
Collection Date : 05/13/15 11:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	44.		mV	2580 B-2011	05/23/15	1
pH	7.6	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-06 (PH) - 7.6 at 21.7c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-07

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-007C SWMU 10-15 4-6FT

Project # :

Collected By :
Collection Date : 05/13/15 11:25

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	35.		mV	2580 B-2011	05/23/15	1
pH	8.1	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-07 (PH) - 8.1 at 21.7c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-08

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-008C SWMU 10-15 18-20FT

Project # :

Collected By :
Collection Date : 05/13/15 11:40

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	23.		mV	2580 B-2011	05/23/15	1
pH	8.8	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-08 (PH) - 8.8 at 21.8c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-09

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-009C SWMU 10-17 6-8FT

Project # :

Collected By :
Collection Date : 05/13/15 13:45

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	35.		mV	2580 B-2011	05/23/15	1
pH	8.1	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-09 (PH) - 8.1 at 22.2c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765575-10

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505617-010C SWMU 10 DUP04

Project # :

Collected By :
Collection Date : 05/13/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium,Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	35.		mV	2580 B-2011	05/23/15	1
pH	8.1	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-10 (PH) - 8.1 at 22.0c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765575

May 26, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG789461	05/19/15 03:43
Cyanide	< .25	mg/kg			WG789989	05/21/15 08:51
Cyanide	< .25	mg/kg			WG790306	05/26/15 09:43

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L765575-05	WG789461
pH	su	7.40	7.40	0.406	1	L765575-01	WG789463
pH	su	8.50	8.50	0.118	1	L765657-06	WG789463
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-01	WG789989
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-03	WG789989
ORP	mV	54.0	56.0	3.64	20	L765419-02	WG790617
ORP	mV	46.0	45.0	2.20	20	L766227-03	WG790617
Cyanide	mg/kg	0.0	0.0	0.0	20	L765924-01	WG790306
Cyanide	mg/kg	0.0	0.0	0.0	20	L766617-01	WG790306

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Chromium,Hexavalent	mg/kg	59.8	64.6	108.	80-120	WG789461
pH	su	7.84	7.79	99.4	98.3-101.7	WG789463
Cyanide	mg/kg	101	117.	116.	50-150	WG789989
ORP	mV	100	101.	101.	90-110	WG790617
Cyanide	mg/kg	101	124.	123.	50-150	WG790306

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chromium,Hexavalent	mg/kg	64.4	64.6	108.	80-120	0.310	20	WG789461
pH	su	7.79	7.79	99.0	98.3-101.7	0.0	20	WG789463
Cyanide	mg/kg	125.	117.	124.	50-150	6.61	20	WG789989
ORP	mV	100.	101.	100.	90-110	0.995	20	WG790617

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765575

May 26, 2015

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/kg	122.	124.	121.	50-150	1.63	20	WG790306

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.7	0.0	20	98.0	75-125	L765575-05	WG789461
Cyanide	mg/kg	3.32	0.0	3.33	100.	80-120	L765575-02	WG789989
Cyanide	mg/kg	2.97	0.0	3.33	89.0	80-120	L765924-04	WG790306

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.9	19.7	99.5	75-125	1.01	20	L765575-05	WG789461
Cyanide	mg/kg	3.47	3.32	104.	80-120	4.42	20	L765575-02	WG789989
Cyanide	mg/kg	3.18	2.97	95.5	80-120	6.83	20	L765924-04	WG790306

Batch number /Run number / Sample number cross reference

WG789463: R3037588: L765575-01 02 03 04 05 06 07 08 09 10
WG789461: R3037738: L765575-01 02 03 04 05 06 07 08 09 10
WG789989: R3038429: L765575-01 02 03 04 05 06
WG790617: R3039123: L765575-01 02 03 04 05 06 07 08 09 10
WG790306: R3039168: L765575-07 08 09 10

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19228	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics
Client ID:	PBS	Batch ID:	19228	RunNo:	26217
Prep Date:	5/14/2015	Analysis Date:	5/15/2015	SeqNo:	777964
				Units:	mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		118	57.9	140			

Sample ID	LCS-19228	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics
Client ID:	LCSS	Batch ID:	19228	RunNo:	26217
Prep Date:	5/14/2015	Analysis Date:	5/15/2015	SeqNo:	777965
				Units:	mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	67.8	130			
Surr: DNOP	5.6		5.000		112	57.9	140			

Sample ID	1505617-001BMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics
Client ID:	SWMU 10-12 (6-8')	Batch ID:	19228	RunNo:	26217
Prep Date:	5/14/2015	Analysis Date:	5/15/2015	SeqNo:	778449
				Units:	mg/Kg-dry

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[illegible] Range Organics (DRO)	42	9.9	49.55	0	84.0	42.3	146			
[illegible]: DNOP	4.6		4.955		93.3	57.9	140			

Sample ID	1505617-001BMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics
Client ID:	SWMU 10-12 (6-8')	Batch ID:	19228	RunNo:	26217
Prep Date:	5/14/2015	Analysis Date:	5/15/2015	SeqNo:	778487
				Units:	mg/Kg-dry

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	49.80	0	86.5	42.3	146	3.41	28.9	
Surr: DNOP	4.7		4.980		94.7	57.9	140	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- [illegible] Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**	
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**	
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777608**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0085	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.023	0.15								J
2-Butanone	ND	0.50								
(disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
..	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777608** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
' richlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		97.4	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		105	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777609** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	104	70	130			
Toluene	1.0	0.050	1.000	0	104	70	130			
Chlorobenzene	0.98	0.050	1.000	0	98.3	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- . Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**
27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777609** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	118	60.6	134			
Trichloroethene (TCE)	0.94	0.050	1.000	0	94.2	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		109	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778722** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0072	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,1-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.019	0.15								J
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778722** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
Surr:yl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
*	Sample Diluted Due to Matrix	E	Value above quantitation range
	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778722** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		107	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778723** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	106	70	130			
Toluene	1.0	0.050	1.000	0	101	70	130			
Chlorobenzene	1.0	0.050	1.000	0	101	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	119	60.6	134			
Trichloroethene (TCE)	0.94	0.050	1.000	0	94.1	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		95.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		98.8	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
.	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBS**	Batch ID: **19270**		RunNo: **26300**		
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**		SeqNo: **781322**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
[illegible]enzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
[illegible] aniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	3.0		3.330		89.3	26.4	129			
Surr: Phenol-d5	2.9		3.330		86.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		85.8	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		88.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		87.0	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.5	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
..	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19270**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781323** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	86.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	88.6	52.3	122			
2-Chlorophenol	2.9	0.20	3.330	0	87.7	49.9	115			
1,4-Dichlorobenzene	1.5	0.20	1.670	0	91.5	43.7	107			
2,4-Dinitrotoluene	1.2	0.50	1.670	0	74.4	36	106			
N-Nitrosodi-n-propylamine	1.3	0.20	1.670	0	80.6	39.5	110			
4-Nitrophenol	2.8	0.25	3.330	0	83.9	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	75.8	23.7	111			
Phenol	3.2	0.20	3.330	0	97.0	52.7	119			
Pyrene	1.5	0.20	1.670	0	90.1	50.4	116			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	101	40.1	114			
Surr: 2-Fluorophenol	3.3		3.330		98.7	26.4	129			
Surr: Phenol-d5	3.4		3.330		103	34.8	118			
Surr: 2,4,6-Tribromophenol	3.4		3.330		101	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.670		96.4	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		100	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.2	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19475	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury						
Client ID:	PBS	Batch ID:	19475	RunNo:	26535						
Prep Date:	5/30/2015	Analysis Date:	5/31/2015	SeqNo:	788620	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.033								

Sample ID	LCS-19475	SampType:	LCS	TestCode:	EPA Method 7471: Mercury						
Client ID:	LCSS	Batch ID:	19475	RunNo:	26535						
Prep Date:	5/30/2015	Analysis Date:	5/31/2015	SeqNo:	788621	Units:	mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.16	0.033	0.1667	0	97.3	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
--	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19280	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals
Client ID:	PBS	Batch ID:	19280	RunNo:	26309
Prep Date:	5/18/2015	Analysis Date:	5/20/2015	SeqNo:	781615 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	LCS-19280	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals
t ID:	LCSS	Batch ID:	19280	RunNo:	26309
Prep Date:	5/18/2015	Analysis Date:	5/20/2015	SeqNo:	781616 Units: mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	27	2.5	25.00	0	109	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	26	0.10	25.00	0	102	80	120			
Beryllium	27	0.15	25.00	0	106	80	120			
Cadmium	26	0.10	25.00	0	102	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	101	80	120			
Iron	27	2.5	25.00	0	106	80	120			
Lead	25	0.25	25.00	0	100	80	120			
Manganese	26	0.10	25.00	0	102	80	120			
Nickel	25	0.50	25.00	0	101	80	120			
Selenium	26	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- .. Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505617**

27-Oct-15

C. .nt: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		98.3	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R26209**	RunNo: **26209**
Prep Date:	Analysis Date: **5/14/2015**	SeqNo: **777631** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.6	79.9	135			
Surr: BFB	510		500.0		103	67.4	150			

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778746** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		97.2	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778747** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.8	79.9	135			
Surr: BFB	480		500.0		96.4	67.4	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505617** RcptNo: **1**

Received by/date: CS 05/13/15

Logged By: **Lindsay Mangin** **5/13/2015 4:23:00 PM**

Completed By: **Lindsay Mangin** **5/14/2015 7:35:30 AM**

Reviewed By: AS 05/14/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1506617	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5.12.15	1545	SOIL	SWMU 10-12(6-8')	2 JARS	—	-001			✓							✓	✓	✓			
				2 VIALS	MeOH	-001										✓					
				2 VIALS	SOBI	-001										✓					
	1600		SWMU 10-12 (20-22')	2 JARS	—	-002			✓							✓	✓	✓			
				2 VIALS	MeOH	-002										✓					
				2 VIALS	SOBI	-002										✓					
5.13.15	0915		SWMU 10-13 (2-4')	2 JARS	—	-003			✓							✓	✓	✓			
				2 VIALS	MeOH	-003										✓					
				2 VIALS	SOBI	-003										✓					
	0925		SWMU 10-13(6-8')	2 JARS	—	-004			✓							✓	✓	✓			
				2 VIALS	MeOH	-004										✓					
				2 VIALS	SOBI	-004										✓					

Date	Time	Relinquished by	Received by	Date	Time
5.13.15	1354	[signature]	[signature]	5-13-15	1354
5-13-15	1623	[signature]	Celina Sim	05/13/15	1623

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chai. of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505617	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5.13.15	0935	SOIL	SWMU 10-13(18-20')	2 JARS	—	-005			✓							✓	✓	✓			
↓	↓	↓	↓	2 VIALS	MEOH	-005											4				
				2 VIALS	SOB1	-005											4				
	1115	SOIL	SWMU 10-15(2-4')	2 JARS	—	-006			✓							✓	✓	✓			
	↓		↓	2 VIALS	MEOH	-006											4				
				2 VIALS	SOB1	-006											4				
	1125		SWMU 10-15(4-6')	2 JARS	—	-007			✓							✓	✓	✓			
	↓		↓	2 VIALS	MEOH	-007											4				
				2 VIALS	SOB1	-007											4				
	1140		SWMU 10-15(18-20')	2 JARS	—	-008			✓							✓	✓	✓			
	↓		↓	2 VIALS	MEOH	-008											4				
↓		↓		2 VIALS	SOB1	-008											4				

Date	Time	Relinquished by:	Received by:	Date	Time
5.13.15	1354	[signature]	[signature]	5-13-15	1354
5-13-15	1623	[signature]	Celina Sena	05/13/15	1623

Remarks:

AT 05/14/15 PLTB

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 7.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505617	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5.13.15	1345	SOIL	SWMU 10-17(6-8')	2J	—	-009			✓							✓	✓	✓			
↓	↓	↓	↓	2V	MEOH	-009										✓					
				2V	SOBI	-009										✓					
	—		SWMU 10 DUP04	2J	—	-010			✓							✓	✓	✓			
	—		↓	2V	MEOH	-010										✓					
↓	—	↓		2V	SOBI	-010										✓					
			MEOH BLANK	2V	MEOH	-011										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.13.15	1354	[signature]	[signature]	5-13-15	1354
5/13/15	1623	[signature]	Celina Sena	05/13/15	1623

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505618

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/13/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 22, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505618**
Date: **11/4/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8270:
Sample SWMU 10 EB06 was extracted 2 days past the 7 day holding time.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505618-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB06
Collection Date: 5/12/2015 5:15:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/15/2015 1:01:24 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 1:01:24 PM	19246
Surr: DNOP	141	0	76.5-150		%REC	1	5/15/2015 1:01:24 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.029	0.10		mg/L	1	5/14/2015 2:23:33 PM	R26194
Chloride	ND	0.13	0.50		mg/L	1	5/14/2015 2:23:33 PM	R26194
Sulfate	ND	0.11	0.50		mg/L	1	5/14/2015 2:23:33 PM	R26194
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	ND	0.00095	0.0020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Beryllium	ND	0.00031	0.0020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Cadmium	ND	0.00097	0.0020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Chromium	ND	0.0018	0.0060		mg/L	1	5/19/2015 4:55:35 PM	R26291
Cobalt	ND	0.0013	0.0060		mg/L	1	5/19/2015 4:55:35 PM	R26291
Iron	ND	0.0073	0.020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Manganese	0.00046	0.00027	0.0020	J	mg/L	1	5/19/2015 4:55:35 PM	R26291
Nickel	ND	0.0021	0.010		mg/L	1	5/19/2015 4:55:35 PM	R26291
[illegible]er	ND	0.0012	0.0050		mg/L	1	5/19/2015 4:55:35 PM	R26291
[illegible]adium	ND	0.0015	0.050		mg/L	1	5/19/2015 4:55:35 PM	R26291
Zinc	0.062	0.0028	0.010		mg/L	1	5/19/2015 4:55:35 PM	R26291
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	ND	0.00095	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Beryllium	ND	0.00031	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Chromium	ND	0.0022	0.0060		mg/L	1	5/21/2015 4:05:51 PM	R26358
Cobalt	ND	0.0013	0.0060		mg/L	1	5/21/2015 4:05:51 PM	R26358
Iron	ND	0.0073	0.020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Manganese	ND	0.0015	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Nickel	ND	0.0023	0.010		mg/L	1	5/21/2015 4:05:51 PM	R26358
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 4:05:51 PM	R26358
Vanadium	ND	0.0015	0.050		mg/L	1	5/21/2015 4:05:51 PM	R26358
Zinc	ND	0.0036	0.010		mg/L	1	5/21/2015 4:05:51 PM	R26358
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00031	0.00014	0.0010	J	mg/L	1	5/19/2015 4:25:30 PM	R26294
Arsenic	ND	0.000065	0.0010		mg/L	1	5/19/2015 4:25:30 PM	R26294
Lead	ND	0.000026	0.0010		mg/L	1	5/19/2015 4:25:30 PM	R26294
Selenium	ND	0.00019	0.0010		mg/L	1	5/19/2015 4:25:30 PM	R26294
EPA 200.8: METALS							Analyst: **DBD**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505618-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB06
Collection Date: 5/12/2015 5:15:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **DBD**	
Antimony	ND	0.00043	0.0010		mg/L	1	5/20/2015 6:37:39 PM	R26325
Arsenic	ND	0.00029	0.0010		mg/L	1	5/20/2015 6:37:39 PM	R26325
Lead	ND	0.000047	0.00050		mg/L	1	5/20/2015 6:37:39 PM	R26325
Selenium	ND	0.00019	0.0010		mg/L	1	5/20/2015 6:37:39 PM	R26325
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	0.00015	0.000059	0.00020	J	mg/L	1	5/28/2015 9:51:59 AM	19401
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Acenaphthylene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Aniline	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Anthracene	ND	1.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Azobenzene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benz(a)anthracene	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(a)pyrene	ND	2.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(b)fluoranthene	ND	2.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(g,h,i)perylene	ND	3.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
[illegible]zo(k)fluoranthene	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
[illegible]zoic acid	ND	1.0	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzyl alcohol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-chloroethoxy)methane	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-chloroethyl)ether	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-chloroisopropyl)ether	ND	2.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-ethylhexyl)phthalate	ND	3.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Bromophenyl phenyl ether	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Butyl benzyl phthalate	ND	2.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Carbazole	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Chloro-3-methylphenol	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Chloroaniline	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Chloronaphthalene	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Chlorophenol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Chlorophenyl phenyl ether	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Chrysene	ND	2.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Di-n-butyl phthalate	ND	2.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Di-n-octyl phthalate	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Dibenz(a,h)anthracene	ND	3.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Dibenzofuran	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1,2-Dichlorobenzene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1,3-Dichlorobenzene	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505618-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB06
Collection Date: 5/12/2015 5:15:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
3,3'-Dichlorobenzidine	ND	2.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Diethyl phthalate	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Dimethyl phthalate	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dichlorophenol	ND	1.4	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dimethylphenol	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4,6-Dinitro-2-methylphenol	ND	1.4	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dinitrophenol	ND	1.1	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dinitrotoluene	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,6-Dinitrotoluene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Fluoranthene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Fluorene	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachlorobenzene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachlorobutadiene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachlorocyclopentadiene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachloroethane	ND	1.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Indeno(1,2,3-cd)pyrene	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
[illegible]horone	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
[illegible]ethylnaphthalene	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Methylnaphthalene	ND	2.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Methylphenol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
3+4-Methylphenol	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
N-Nitrosodi-n-propylamine	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
N-Nitrosodimethylamine	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
N-Nitrosodiphenylamine	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Naphthalene	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Nitroaniline	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
3-Nitroaniline	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Nitroaniline	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Nitrobenzene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Nitrophenol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Nitrophenol	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Pentachlorophenol	ND	1.1	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Phenanthrene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Phenol	ND	1.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Pyrene	ND	2.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Pyridine	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1,2,4-Trichlorobenzene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4,5-Trichlorophenol	ND	1.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505618-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB06
Collection Date: 5/12/2015 5:15:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	1.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Surr: 2-Fluorophenol	52.1	0	14.9-111	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: Phenol-d5	41.1	0	11.3-108	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: 2,4,6-Tribromophenol	67.2	0	15.7-154	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: Nitrobenzene-d5	73.7	0	47.8-106	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: 2-Fluorobiphenyl	77.5	0	21.3-123	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: 4-Terphenyl-d14	52.7	0	14.3-135	H	%REC	1	5/26/2015 2:10:51 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Toluene	0.45	0.11	1.0	J	µg/L	1	5/15/2015 5:08:12 PM	R26221
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,4-Trimethylbenzene	0.18	0.16	1.0	J	µg/L	1	5/15/2015 5:08:12 PM	R26221
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Naphthalene	ND	0.22	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Acetone	1.4	0.94	10	J	µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromobenzene	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromoform	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromomethane	ND	1.2	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Butanone	ND	0.36	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Carbon disulfide	ND	0.67	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chloroethane	ND	0.10	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chloroform	ND	0.21	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chloromethane	ND	0.17	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Dibromomethane	ND	0.23	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505618-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB06
Collection Date: 5/12/2015 5:15:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Hexanone	ND	0.48	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Butylbenzene	ND	0.23	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
[illegible]ene	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/15/2015 5:08:12 PM	R26221
Surr: 1,2-Dichloroethane-d4	97.6	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
Surr: Dibromofluoromethane	97.1	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
Surr: Toluene-d8	96.2	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505618-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 EB06
Collection Date: 5/12/2015 5:15:00 PM
Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/15/2015 5:08:12 PM	R26221
Surr: BFB	94.3	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

12065 Lebanon Rd.
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REPORT OF ANALYSIS

May 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765573-01

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505618-001G SWMU 10 EB06

Project # :

Collected By :
Collection Date : 05/12/15 17:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/21/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/22/15 10:43 Printed: 05/22/15 10:43

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Est. 1970

REPORT OF ANALYSIS

May 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765573-02

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505618-001H SWMU 10 EB06

Project # :

Collected By :
Collection Date : 05/12/15 17:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/18/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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.
Reported: 05/22/15 10:43 Printed: 05/22/15 10:43

ESC
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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765573

May 22, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG789295	05/18/15 10:11
Cyanide	< .005	mg/l			WG790550	05/21/15 23:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000590	0.000590	0.0	20	L764570-01	WG789295
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L764999-01	WG789295
Cyanide	mg/l	0.0	0.0	0.0	20	L765316-01	WG790550
Cyanide	mg/l	0.0	0.0	0.0	20	L765488-02	WG790550

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00189	94.5	90-110	WG789295
Cyanide	mg/l	.1	0.105	105.	90-110	WG790550

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
xavalent Chromium	mg/l	0.00192	0.00189	96.0	90-110	1.57	20	WG789295
Cyanide	mg/l	0.102	0.105	102.	90-110	2.90	20	WG790550

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0517	0.0	.05	100.	90-110	L764728-02	WG789295
Cyanide	mg/l	0.203	0.0	.2	100.	90-110	L765316-03	WG790550

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0502	0.0517	100.	90-110	2.94	20	L764728-02	WG789295
Cyanide	mg/l	0.188	0.203	94.0	90-110	7.67	20	L765316-03	WG790550

Batch number /Run number / Sample number cross reference

WG789295: R3037684: L765573-02
WG790550: R3038621: L765573-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **R26358** RunNo: **26358**
Prep Date: Analysis Date: **5/21/2015** SeqNo: **783228** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **R26358** RunNo: **26358**
Prep Date: Analysis Date: **5/21/2015** SeqNo: **783229** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
B	0.47	0.0020	0.5000	0	94.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.48	0.0020	0.5000	0	96.7	85	115			
Chromium	0.47	0.0060	0.5000	0	93.7	85	115			
Cobalt	0.46	0.0060	0.5000	0	91.9	85	115			
Iron	0.47	0.020	0.5000	0	94.8	85	115			
Manganese	0.46	0.0020	0.5000	0	92.3	85	115			
Nickel	0.45	0.010	0.5000	0	91.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.49	0.050	0.5000	0	98.5	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26291** RunNo: **26291**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **780950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	0.0014	0.0050								J
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26291** RunNo: **26291**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **780951** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E	0.46	0.0020	0.5000	0	92.3	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.8	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Chromium	0.46	0.0060	0.5000	0	92.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Nickel	0.46	0.010	0.5000	0	92.1	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	85	115			
Vanadium	0.47	0.050	0.5000	0	94.9	85	115			
Zinc	0.46	0.010	0.5000	0	91.9	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Date: Analysis Date: **5/19/2015** SeqNo: **781115** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26325** RunNo: **26325**
Prep Date: Analysis Date: **5/20/2015** SeqNo: **782323** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26325** RunNo: **26325**
Prep Date: Analysis Date: **5/20/2015** SeqNo: **782323** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.4	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	97.5	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26325** RunNo: **26325**
Prep Date: Analysis Date: **5/20/2015** SeqNo: **782324** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26325** RunNo: **26325**
Prep Date: Analysis Date: **5/20/2015** SeqNo: **782326** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26325** RunNo: **26325**
Prep Date: Analysis Date: **5/20/2015** SeqNo: **782327** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **150423-004AMS** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **R26325** RunNo: **26325**
Prep Date: Analysis Date: **5/20/2015** SeqNo: **786691** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	102	70	130			
Arsenic	0.031	0.0010	0.02500	0	125	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**150423-004AMS**	SampType:	**MS**		TestCode:	**EPA 200.8: Metals**					
Client ID:	**BatchQC**	Batch ID:	**R26325**		RunNo:	**26325**					
Prep Date:		Analysis Date:	**5/20/2015**		SeqNo:	**786691**		Units:	**mg/L**		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium		0.027	0.0010	0.02500	0	109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Date: Analysis Date: **5/19/2015** SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26325** RunNo: **26325**
Prep Date: Analysis Date: **5/20/2015** SeqNo: **782370** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R26325	RunNo:	26325					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782370	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	98.4	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	97.5	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R26325	RunNo:	26325					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782371	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R26325	RunNo:	26325					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782372	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R26325	RunNo:	26325					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782373	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19401**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19401**	RunNo:	**26454**
Prep Date:	**5/27/2015**	Analysis Date:	**5/28/2015**	SeqNo:	**786366** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.00020								J

Sample ID	**LCS-19401**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19401**	RunNo:	**26454**
Prep Date:	**5/27/2015**	Analysis Date:	**5/28/2015**	SeqNo:	**786367** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.3	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R26194** RunNo: **26194**
Prep Date: Analysis Date: **5/14/2015** SeqNo: **777996** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW** Batch ID: **R26194** RunNo: **26194**
Prep Date: Analysis Date: **5/14/2015** SeqNo: **777997** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.1	90	110			
Chloride	4.9	0.50	5.000	0	97.3	90	110			
Sulfate	9.9	0.50	10.00	0	99.0	90	110			

Sample ID **1505618-001DMS** SampType: **MS** TestCode: **EPA Method 300.0: Anions**
Client ID: **SWMU 10 EB06** Batch ID: **R26194** RunNo: **26194**
Prep Date: Analysis Date: **5/14/2015** SeqNo: **778011** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	105	75.3	111			
Chloride	4.8	0.50	5.000	0	95.3	81.2	116			
Sulfate	9.8	0.50	10.00	0	97.5	84.2	113			

Sample ID **1505618-001DMSD** SampType: **MSD** TestCode: **EPA Method 300.0: Anions**
Client ID: **SWMU 10 EB06** Batch ID: **R26194** RunNo: **26194**
Prep Date: Analysis Date: **5/14/2015** SeqNo: **778012** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	106	75.3	111	0.803	20	
Chloride	4.8	0.50	5.000	0	95.9	81.2	116	0.597	20	
Sulfate	9.8	0.50	10.00	0	98.0	84.2	113	0.519	20	

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW** Batch ID: **R26194** RunNo: **26194**
Prep Date: Analysis Date: **5/14/2015** SeqNo: **778054** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**		SampType: **LCS**			TestCode: **EPA Method 300.0: Anions**					
Client ID: **LCSW**		Batch ID: **R26194**			RunNo: **26194**					
Prep Date:		Analysis Date: **5/14/2015**			SeqNo: **778055**		Units: **mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	105	90	110			
Chloride	4.8	0.50	5.000	0	96.5	90	110			
Sulfate	9.8	0.50	10.00	0	97.7	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19246	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW	Batch ID:	19246	RunNo:	26216				
Prep Date:	5/15/2015	Analysis Date:	5/15/2015	SeqNo:	778433	Units:	mg/L		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID	LCS-19246	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	LCSW	Batch ID:	19246	RunNo:	26216				
Prep Date:	5/15/2015	Analysis Date:	5/15/2015	SeqNo:	778434	Units:	mg/L		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Sample ID	1505618-001CMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	SWMU 10 EB06	Batch ID:	19246	RunNo:	26216				
Prep Date:	5/15/2015	Analysis Date:	5/15/2015	SeqNo:	778436	Units:	mg/L		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
D[illegible] Range Organics (DRO)	6.2	1.0	5.000	0	123	75.9	164			
[illegible] DNOP	0.64		0.5000		129	76.5	150			

Sample ID	1505618-001CMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	SWMU 10 EB06	Batch ID:	19246	RunNo:	26216				
Prep Date:	5/15/2015	Analysis Date:	5/15/2015	SeqNo:	778437	Units:	mg/L		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.1	1.0	5.000	0	121	75.9	164	1.82	22.1	
Surr: DNOP	0.66		0.5000		131	76.5	150	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778328** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.34	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
C disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	0.48	2.0								J
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **PBW** Batch ID: **R26221** RunNo: **26221**

Prep Date: Analysis Date: **5/15/2015** SeqNo: **778328** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,[illegible]ichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **LCSW** Batch ID: **R26221** RunNo: **26221**

Prep Date: Analysis Date: **5/15/2015** SeqNo: **778330** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **LCSW** Batch ID: **R26221** RunNo: **26221**

Prep Date: Analysis Date: **5/15/2015** SeqNo: **778330** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	24	1.0	20.00	0	119	75.6	144			
Trichloroethene (TCE)	19	1.0	20.00	0	94.1	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.6	70	130			
Surr: Toluene-d8	9.9		10.00		98.8	70	130			

Sample ID **1505618-001a ms** SampType: **MS** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **SWMU 10 EB06** Batch ID: **R26221** RunNo: **26221**

Prep Date: Analysis Date: **5/15/2015** SeqNo: **778718** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.3	70	130			
Toluene	20	1.0	20.00	0.4492	100	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	111	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	87.3	70	130			
1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.9	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.8	70	130			
Surr: Toluene-d8	10		10.00		99.9	70	130			

Sample ID **1505618-001a msd** SampType: **MSD** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **SWMU 10 EB06** Batch ID: **R26221** RunNo: **26221**

Prep Date: Analysis Date: **5/15/2015** SeqNo: **778719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.5	70	130	0.269	20	
Toluene	20	1.0	20.00	0.4492	97.1	70	130	2.98	20	
Chlorobenzene	19	1.0	20.00	0	92.7	70	130	5.38	20	
1,1-Dichloroethene	21	1.0	20.00	0	103	70	130	6.67	20	
Trichloroethene (TCE)	16	1.0	20.00	0	81.1	70	130	7.33	20	
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130	0	0	
Surr: Dibromofluoromethane	9.7		10.00		97.4	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**	
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Butyl benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3'-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**	
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
N[illegible]alene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19344** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSW** Batch ID: **19344** RunNo: **26418**

Prep Date: **5/21/2015** Analysis Date: **5/26/2015** SeqNo: **785103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID **lcsd-19344** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS02** Batch ID: **19344** RunNo: **26418**

Prep Date: **5/21/2015** Analysis Date: **5/26/2015** SeqNo: **785105** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	21.3	123	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcsd-19344**	SampType:	**LCSD**		TestCode:	**EPA Method 8270C: Semivolatiles**				
Client ID:	**LCSS02**	Batch ID:	**19344**		RunNo:	**26418**				
Prep Date:	**5/21/2015**	Analysis Date:	**5/26/2015**		SeqNo:	**785105**	Units:	**µg/L**		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14		57.3		100.0		57.3	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505618**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW** Batch ID: **R26221** RunNo: **26221**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **778743** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.7		10.00		97.2	70	130			

Sample ID **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW** Batch ID: **R26221** RunNo: **26221**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **778745** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.8	80.6	122			
Surr: BFB	9.6		10.00		96.4	70	130			

Sample ID **1505618-001b ms** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10 EB06** Batch ID: **R26221** RunNo: **26221**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **778820** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	89.2	56.9	133			
BFB	10		10.00		102	70	130			

Sample ID **1505618-001b msd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10 EB06** Batch ID: **R26221** RunNo: **26221**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **778821** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.42	0.050	0.5000	0	83.2	56.9	133	7.01	20	
Surr: BFB	9.6		10.00		95.9	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505618 RcptNo: 1

Received by/date: CS 05/13/15

Logged By: Ashley Gallegos 5/13/2015 4:23:00 PM AG

Completed By: Ashley Gallegos 5/14/2015 8:17:10 AM AG

Reviewed By: 05/14/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
    # of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)
    Adjusted? no
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)
    Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks: For 300 analysis, poured into a 500ml unpreserved bottle from a 1L Amber CS 05/14/15

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

 APPROXIMATELY 250ml FROM PLASTIC BOTTLE USED FOR 8270 ANALYSIS DUE TO LOW SAMPLE VOLUME. 05/21/15

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505618	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOL)	GEN CHEM	CR 6		Air Bubbles (Y or N)
12.15	1715	WATER	SWMU 10 EB06	40 ML VOA-6	HCL	-001			✓							✓						
↓	↓	↓	↓	1 LITER AMBER-2	—												✓		✓			
				250 ML AMBER-1	—					✓												
				100 ML PLASTIC-1	HNO_3													✓				
				500 ML PLASTIC-1	HNO_3													✓				
				500 ML PLASTIC-1	NaOH								✓									
✓	✓	✓	↓	50 ML PLASTIC-1	NH_4SO_4															✓		

Date:	Time:	Relinquished by:	Received by:	Date	Time
13.15	1357			5-13-15	1357
Date:	Time:	Relinquished by:	Received by:	Date	Time
13.15	1623		Collin Sims	05/13/15	1623

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505698

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 22, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505698**
Date: **11/4/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8260:
The Matrix Spike (MS) recoveries were low and the Matrix Spike Duplicate (MSD) recoveries were acceptable. The MS was reanalzyed and confirmed to have low recoveries which is attributed to the sample matrix.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505698-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-11-GW
Collection Date: 5/14/2015 11:20:00 AM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	5.5	0.91	1.0		mg/L	1	5/15/2015 6:51:00 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 6:51:00 PM	19246
Surr: DNOP	118	0	76.5-150		%REC	1	5/15/2015 6:51:00 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	ND	0.15	0.50		mg/L	5	5/15/2015 6:38:40 PM	R26247
Chloride	2000	27	100		mg/L	200	5/19/2015 7:50:31 PM	R26305
Sulfate	380	2.3	10		mg/L	20	5/15/2015 6:51:04 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.24	0.00095	0.0020		mg/L	1	5/15/2015 5:28:13 PM	R26242
Beryllium	ND	0.00031	0.0020		mg/L	1	5/15/2015 5:28:13 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/18/2015 7:07:26 PM	R26265
Chromium	0.0054	0.0018	0.0060	J	mg/L	1	5/15/2015 5:28:13 PM	R26242
Cobalt	0.010	0.0013	0.0060		mg/L	1	5/15/2015 5:28:13 PM	R26242
Iron	0.78	0.0073	0.020	*	mg/L	1	5/15/2015 5:28:13 PM	R26242
Manganese	3.9	0.0013	0.010	*	mg/L	5	5/18/2015 7:09:46 PM	R26265
Nickel	0.024	0.0021	0.010		mg/L	1	5/15/2015 5:28:13 PM	R26242
er	ND	0.0012	0.0050		mg/L	1	5/18/2015 7:07:26 PM	R26265
adium	0.0052	0.0015	0.050	J	mg/L	1	5/15/2015 5:28:13 PM	R26242
Zinc	0.049	0.0028	0.010		mg/L	1	5/15/2015 5:28:13 PM	R26242
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	5.3	0.048	0.10	*	mg/L	50	5/21/2015 3:37:54 PM	19333
Beryllium	0.017	0.00031	0.0020	*	mg/L	1	5/21/2015 3:13:08 PM	19333
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 3:13:08 PM	19333
Chromium	0.073	0.0022	0.0060		mg/L	1	5/21/2015 3:13:08 PM	19333
Cobalt	0.077	0.0013	0.0060		mg/L	1	5/21/2015 3:13:08 PM	19333
Iron	86	1.5	4.0	*	mg/L	200	5/21/2015 3:39:43 PM	19333
Manganese	13	0.076	0.10	*	mg/L	50	5/21/2015 3:37:54 PM	19333
Nickel	0.13	0.0023	0.010	*	mg/L	1	5/21/2015 3:13:08 PM	19333
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 3:13:08 PM	19333
Vanadium	0.12	0.0015	0.050		mg/L	1	5/21/2015 3:13:08 PM	19333
Zinc	0.19	0.0036	0.010		mg/L	1	5/21/2015 3:13:08 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.0014	0.010		mg/L	10	5/19/2015 3:36:05 PM	R26294
Arsenic	0.0039	0.00065	0.010	J	mg/L	10	5/19/2015 3:36:05 PM	R26294
Lead	0.00074	0.00026	0.010	J	mg/L	10	5/19/2015 3:36:05 PM	R26294
Selenium	0.0076	0.0019	0.010	J	mg/L	10	5/19/2015 3:36:05 PM	R26294
EPA 200.8: METALS							Analyst: **TES**	

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Qualifiers:

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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505698-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-11-GW
Collection Date: 5/14/2015 11:20:00 AM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **TES**	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 2:11:15 PM	19333
Arsenic	0.016	0.0015	0.0050	*	mg/L	5	5/21/2015 2:47:37 PM	19333
Lead	0.18	0.00047	0.0050	*	mg/L	10	5/26/2015 5:11:20 PM	19333
Selenium	0.0099	0.0019	0.010	J	mg/L	10	5/21/2015 2:50:41 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	0.00075	0.000059	0.00020		mg/L	1	5/28/2015 10:05:07 AM	19401
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	3.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Acenaphthylene	ND	3.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Aniline	ND	3.1	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Anthracene	ND	3.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Azobenzene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benz(a)anthracene	ND	5.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(a)pyrene	ND	5.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(b)fluoranthene	ND	4.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(g,h,i)perylene	ND	6.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
zo(k)fluoranthene	ND	5.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
zoic acid	ND	2.1	40		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzyl alcohol	ND	2.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-chloroethoxy)methane	ND	3.6	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-chloroethyl)ether	ND	3.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-chloroisopropyl)ether	ND	4.1	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-ethylhexyl)phthalate	ND	6.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Bromophenyl phenyl ether	ND	2.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Butyl benzyl phthalate	ND	4.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Carbazole	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Chloro-3-methylphenol	ND	2.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Chloroaniline	ND	3.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2-Chloronaphthalene	ND	3.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2-Chlorophenol	ND	2.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Chlorophenyl phenyl ether	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Chrysene	ND	4.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Di-n-butyl phthalate	ND	4.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Di-n-octyl phthalate	ND	3.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Dibenz(a,h)anthracene	ND	6.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Dibenzofuran	ND	3.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1,2-Dichlorobenzene	ND	3.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1,3-Dichlorobenzene	ND	3.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505698-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-11-GW
Collection Date: 5/14/2015 11:20:00 AM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
3,3'-Dichlorobenzidine	ND	5.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Diethyl phthalate	ND	3.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Dimethyl phthalate	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dichlorophenol	ND	2.8	40		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dimethylphenol	ND	3.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4,6-Dinitro-2-methylphenol	ND	2.7	40		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dinitrophenol	ND	2.1	40		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dinitrotoluene	ND	2.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2,6-Dinitrotoluene	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Fluoranthene	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Fluorene	ND	3.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachlorobutadiene	ND	3.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachlorocyclopentadiene	ND	2.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachloroethane	ND	3.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Indeno(1,2,3-cd)pyrene	ND	4.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Isophorone	ND	3.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1-Methylnaphthalene	20	3.6	20	J	µg/L	1	5/26/2015 2:38:45 PM	19344
2-Methylnaphthalene	16	4.5	20	J	µg/L	1	5/26/2015 2:38:45 PM	19344
2-Methylphenol	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
3+4-Methylphenol	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
N-Nitrosodi-n-propylamine	ND	4.1	20		µg/L	1	5/26/2015 2:38:45 PM	19344
N-Nitrosodimethylamine	ND	2.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
N-Nitrosodiphenylamine	ND	4.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Naphthalene	4.4	3.7	20	J	µg/L	1	5/26/2015 2:38:45 PM	19344
2-Nitroaniline	ND	3.6	20		µg/L	1	5/26/2015 2:38:45 PM	19344
3-Nitroaniline	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Nitroaniline	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Nitrobenzene	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2-Nitrophenol	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Nitrophenol	ND	2.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Pentachlorophenol	ND	2.3	40		µg/L	1	5/26/2015 2:38:45 PM	19344
Phenanthrene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Phenol	ND	2.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Pyrene	ND	4.6	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Pyridine	ND	3.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1,2,4-Trichlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4,5-Trichlorophenol	ND	3.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505698-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-11-GW
Collection Date: 5/14/2015 11:20:00 AM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Surr: 2-Fluorophenol	50.9	0	14.9-111		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: Phenol-d5	40.8	0	11.3-108		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: 2,4,6-Tribromophenol	80.2	0	15.7-154		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: Nitrobenzene-d5	76.4	0	47.8-106		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: 2-Fluorobiphenyl	80.3	0	21.3-123		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: 4-Terphenyl-d14	75.6	0	14.3-135		%REC	1	5/26/2015 2:38:45 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	2.5	0.13	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Toluene	6.0	0.22	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Ethylbenzene	40	0.20	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Methyl tert-butyl ether (MTBE)	14	0.35	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,4-Trimethylbenzene	64	0.32	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,3,5-Trimethylbenzene	22	0.25	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Naphthalene	45	0.44	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
ethylnaphthalene	70	1.1	8.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Methylnaphthalene	98	1.2	8.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Acetone	8.8	1.9	20	J	µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Butanone	ND	0.73	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505698-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-11-GW
Collection Date: 5/14/2015 11:20:00 AM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1-Dichloroethane	0.93	0.80	2.0	J	µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Isopropylbenzene	8.5	0.30	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
4-Isopropyltoluene	2.7	0.38	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
n-Butylbenzene	3.4	0.49	6.0	J	µg/L	2	5/20/2015 1:54:40 PM	R26322
n-Propylbenzene	11	0.33	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Butylbenzene	2.2	0.46	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
[illegible]rene	ND	0.21	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Xylenes, Total	230	0.56	3.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
Surr: 4-Bromofluorobenzene	84.5	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
Surr: Dibromofluoromethane	102	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
Surr: Toluene-d8	93.4	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

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CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505698-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-11-GW
Collection Date: 5/14/2015 11:20:00 AM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	1.5	0.080	0.10		mg/L	2	5/20/2015 1:54:40 PM	R26322
Surr: BFB	95.4	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322

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CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505698-002
Matrix: TRIP BLANK
Client Sample ID: Trip Blank
Collection Date:
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Ethylbenzene	0.11	0.10	1.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2,4-Trimethylbenzene	0.29	0.16	1.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Naphthalene	0.31	0.22	2.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
1-Methylnaphthalene	0.71	0.54	4.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Methylnaphthalene	1.1	0.59	4.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
bon disulfide	ND	0.67	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
rbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505698-002
Matrix: TRIP BLANK
Client Sample ID: Trip Blank
Collection Date:
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
.,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Xylenes, Total	0.41	0.28	1.5	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
Surr: Dibromofluoromethane	101	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
Surr: Toluene-d8	98.1	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 3:21:13 PM	R26322
Surr: BFB	99.5	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

12065 Lebanon Rd.
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765573-01

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505618-001G SWMU 10 EB06

Project # :

Collected By :
Collection Date : 05/12/15 17:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/21/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 05/22/15 10:43 Printed: 05/22/15 10:43

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

May 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765573-02

Date Received : May 15, 2015
Description :

Site ID :

Sample ID : 1505618-001H SWMU 10 EB06

Project # :

Collected By :
Collection Date : 05/12/15 17:15

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/18/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/22/15 10:43 Printed: 05/22/15 10:43

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Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765573

May 22, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG789295	05/18/15 10:11
Cyanide	< .005	mg/l			WG790550	05/21/15 23:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000590	0.000590	0.0	20	L764570-01	WG789295
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L764999-01	WG789295
Cyanide	mg/l	0.0	0.0	0.0	20	L765316-01	WG790550
Cyanide	mg/l	0.0	0.0	0.0	20	L765488-02	WG790550

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00189	94.5	90-110	WG789295
Cyanide	mg/l	.1	0.105	105.	90-110	WG790550

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
.xavalent Chromium	mg/l	0.00192	0.00189	96.0	90-110	1.57	20	WG789295
Cyanide	mg/l	0.102	0.105	102.	90-110	2.90	20	WG790550

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0517	0.0	.05	100.	90-110	L764728-02	WG789295
Cyanide	mg/l	0.203	0.0	.2	100.	90-110	L765316-03	WG790550

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0502	0.0517	100.	90-110	2.94	20	L764728-02	WG789295
Cyanide	mg/l	0.188	0.203	94.0	90-110	7.67	20	L765316-03	WG790550

Batch number /Run number / Sample number cross reference

WG789295: R3037684: L765573-02
WG790550: R3038621: L765573-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**PBW**	Batch ID:	**R26265**	RunNo:	**26265**
Prep Date:		Analysis Date:	**5/18/2015**	SeqNo:	**780003** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**LCSW**	Batch ID:	**R26265**	RunNo:	**26265**
Prep Date:		Analysis Date:	**5/18/2015**	SeqNo:	**780004** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.4	85	115			
Manganese	0.47	0.0020	0.5000	0	93.2	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26358**
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783226** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	**LCS-19333**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**LCSW**	Batch ID:	**19333**	RunNo:	**26358**
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783227** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-19333**	SampType: **LCS**		TestCode: **EPA Method 200.7: Metals**	
Client ID:	**LCSW**	Batch ID: **19333**		RunNo: **26358**	
Prep Date:	**5/20/2015**	Analysis Date: **5/21/2015**		SeqNo: **783227**	Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26242** RunNo: **26242**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **779016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26242** RunNo: **26242**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **779017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
C	0.50	0.0060	0.5000	0	99.5	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26265** RunNo: **26265**
Prep Date: Analysis Date: **5/18/2015** SeqNo: **780132** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26265** RunNo: **26265**
Prep Date: Analysis Date: **5/18/2015** SeqNo: **780133** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Manganese	0.46	0.0020	0.5000	0	91.7	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals
Client ID:	LCSW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781112 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals
Client ID:	LCSW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781113 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	R26294	RunNo:	26294
Date:		Analysis Date:	5/19/2015	SeqNo:	781115 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781116 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	19333	RunNo:	26348
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	782930 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals				
Client ID:	PBW	Batch ID:	19333	RunNo:	26348				
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	782930	Units:	mg/L		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals				
Client ID:	PBW	Batch ID:	19333	RunNo:	26606				
Prep Date:	5/20/2015	Analysis Date:	6/3/2015	SeqNo:	792073	Units:	mg/L		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Date: Analysis Date: **5/19/2015** SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19401**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19401**	RunNo:	**26454**
Prep Date:	**5/27/2015**	Analysis Date:	**5/28/2015**	SeqNo:	**786366** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00012	0.00020								J

Sample ID	**LCS-19401**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19401**	RunNo:	**26454**
Prep Date:	**5/27/2015**	Analysis Date:	**5/28/2015**	SeqNo:	**786367** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.3	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID:	R26247	RunNo:	26247						
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	779359	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		ND	0.100								
Sulfate		ND	0.500								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID:	R26247	RunNo:	26247						
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	779360	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride		0.508	0.100	0.5000	0	102	90	110			
Sulfate		10.2	0.500	10.00	0	102	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID:	R26305	RunNo:	26305						
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781436	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID:	R26305	RunNo:	26305						
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781437	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		4.7	0.50	5.000	0	93.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**	
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
C disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1 ichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID **1505698-001a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **SWMU 10-11-GW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782111** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	6.6	2.0	40.00	2.493	10.4	70	130			S
Toluene	11	2.0	40.00	5.999	13.4	70	130			S
Chlorobenzene	4.7	2.0	40.00	0	11.7	70	130			S
1,1-Dichloroethene	3.1	2.0	40.00	0.5016	6.58	70	130			S
Trichloroethene (TCE)	4.0	2.0	40.00	0	9.98	70	130			S
Surr: 1,2-Dichloroethane-d4	21		20.00		105	70	130			
Surr: 4-Bromofluorobenzene	19		20.00		94.1	70	130			
Surr: Dibromofluoromethane	19		20.00		93.8	70	130			
Surr: Toluene-d8	20		20.00		101	70	130			

Sample ID **1505698-001a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **SWMU 10-11-GW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782112** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	40	2.0	40.00	2.493	92.7	70	130	142	20	R
Toluene	43	2.0	40.00	5.999	92.8	70	130	117	20	R
Chlorobenzene	36	2.0	40.00	0	90.0	70	130	154	20	R
1,1-Dichloroethene	39	2.0	40.00	0.5016	95.0	70	130	170	20	R
Trichloroethene (TCE)	34	2.0	40.00	0	85.4	70	130	158	20	R
Surr: 1,2-Dichloroethane-d4	23		20.00		114	70	130	0	0	
Surr: 4-Bromofluorobenzene	16		20.00		79.0	70	130	0	0	
Surr: Dibromofluoromethane	21		20.00		105	70	130	0	0	
Surr: Toluene-d8	21		20.00		103	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**	
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Butylbenzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3'-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**	
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
N[illegible]alene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19344** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **19344** RunNo: **26418**
Prep Date: **5/21/2015** Analysis Date: **5/26/2015** SeqNo: **785103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID **lcsd-19344** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **19344** RunNo: **26418**
Prep Date: **5/21/2015** Analysis Date: **5/26/2015** SeqNo: **785105** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	21.3	123	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcsd-19344**	SampType: **LCSD**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **LCSS02**	Batch ID: **19344**		RunNo: **26418**		
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**		SeqNo: **785105**	Units: **µg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57.3		100.0		57.3	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505698**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782177** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782181** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505698** RcptNo: 1

Received by/date: 05/15/15

Logged By: **Lindsay Mangin** 5/15/2015 8:55:00 AM

Completed By: **Lindsay Mangin** 5/15/2015 9:28:29 AM

Reviewed By: 05/19/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☑ CS 05/15/15
9. Was preservative added to bottles? Yes ☑ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☑ No VOA Vials ☐ CS 05/15/15 Samples -001A & -001B (all vials) have bubbles.
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)

Adjusted? yes

Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks: For metals analysis, added 1ml HNO_3 for acceptable pH. Held in Logi for 24 hours. For 300 analysis, poured off from a 1L Amber to a 500ml plastic. CS 05/15

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Approximately 250mL from plastic bottle used for 8270 analysis due to low sample volume. KMS 5/21/15

Chain of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name:
Project #: SWMU 10
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☐ Yes ☐ No
Sample Temperature: 2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505098	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR6		Air Bubbles (Y or N)
5.14.15	1120	WATER	SWMU 10-11-GW	40 mL VOA-6	HCL	-001			✓							✓						
↓	↓	↓	↓	1L AMBER-2	—	-002											✓		✓			
				250 mL AMBER-1	—	-003				✓												
				100 mL PLASTIC-1	HNO_3	-001												✓				
				500 mL PLASTIC-1	HNO_3	-001												✓				
				500 mL PLASTIC-1	NaOH	-001							✓									
↓	↓	↓	↓	50 mL PLASTIC-1	NH_4SO_4	-001														✓		
5.14.15	—	WATER	TRIP BLANK	40 mL VOA-4	HCL	-002										✓						

Date	Time	Relinquished by	Received by	Date	Time
5.14.15	1315	[signature]	[signature]	5/14/15	1315
5-15-15	8:55	[signature]	[signature]	05/15/15	0855

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505700

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 25, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: **1505700**
Date: **11/4/2015**

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding hexavalent Chromium:
The Cr6 sample was received at a pH of 7.5. The sample pH should be in the range of 8 - 10.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505700-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-12-GW
Collection Date: 5/14/2015 12:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/15/2015 7:44:34 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 7:44:34 PM	19246
Surr: DNOP	123	0	76.5-150		%REC	1	5/15/2015 7:44:34 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	1.2	0.15	0.50		mg/L	5	5/15/2015 7:28:18 PM	R26247
Chloride	330	2.7	10		mg/L	20	5/15/2015 7:40:43 PM	R26247
Sulfate	370	2.3	10		mg/L	20	5/15/2015 7:40:43 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.085	0.00095	0.0020		mg/L	1	5/15/2015 5:30:13 PM	R26242
Beryllium	ND	0.00031	0.0020		mg/L	1	5/15/2015 5:30:13 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/18/2015 7:11:48 PM	R26265
Chromium	0.0080	0.0018	0.0060		mg/L	1	5/15/2015 5:30:13 PM	R26242
Cobalt	0.0044	0.0013	0.0060	J	mg/L	1	5/15/2015 5:30:13 PM	R26242
Iron	2.6	0.036	0.10	*	mg/L	5	5/18/2015 7:14:00 PM	R26265
Manganese	0.91	0.00027	0.0020	*	mg/L	1	5/15/2015 5:30:13 PM	R26242
Nickel	0.012	0.0021	0.010		mg/L	1	5/15/2015 5:30:13 PM	R26242
[illegible]er	ND	0.0012	0.0050		mg/L	1	5/18/2015 7:11:48 PM	R26265
[illegible]adium	0.011	0.0015	0.050	J	mg/L	1	5/15/2015 5:30:13 PM	R26242
Zinc	0.062	0.0028	0.010		mg/L	1	5/15/2015 5:30:13 PM	R26242
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	7.3	0.048	0.10	*	mg/L	50	5/21/2015 3:41:30 PM	19333
Beryllium	0.037	0.0016	0.010	*	mg/L	5	5/21/2015 3:18:50 PM	19333
Cadmium	ND	0.0048	0.010		mg/L	5	5/21/2015 3:18:50 PM	19333
Chromium	0.17	0.011	0.030	*	mg/L	5	5/21/2015 3:18:50 PM	19333
Cobalt	0.14	0.0063	0.030		mg/L	5	5/21/2015 3:18:50 PM	19333
Iron	140	3.6	10	*	mg/L	500	5/21/2015 3:43:19 PM	19333
Manganese	18	0.076	0.10	*	mg/L	50	5/21/2015 3:41:30 PM	19333
Nickel	0.26	0.011	0.050	*	mg/L	5	5/21/2015 3:18:50 PM	19333
Silver	ND	0.011	0.025		mg/L	5	5/21/2015 3:18:50 PM	19333
Vanadium	0.17	0.0075	0.25	J	mg/L	5	5/21/2015 3:18:50 PM	19333
Zinc	0.45	0.018	0.050		mg/L	5	5/21/2015 3:18:50 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	0.00023	0.00014	0.0010	J	mg/L	1	5/19/2015 2:56:36 PM	R26294
Arsenic	0.0025	0.000065	0.0010		mg/L	1	5/19/2015 2:56:36 PM	R26294
Lead	0.0014	0.000026	0.0010		mg/L	1	5/19/2015 2:56:36 PM	R26294
Selenium	0.0030	0.00019	0.0010		mg/L	1	5/19/2015 2:56:36 PM	R26294
EPA 200.8: METALS							Analyst: **TES**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505700-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-12-GW
Collection Date: 5/14/2015 12:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **TES**	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 2:15:48 PM	19333
Arsenic	0.023	0.0029	0.010	*	mg/L	10	5/21/2015 2:53:44 PM	19333
Lead	0.28	0.0024	0.025	*	mg/L	50	5/21/2015 2:56:47 PM	19333
Selenium	0.0080	0.0019	0.010	J	mg/L	10	5/21/2015 2:53:44 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	0.00039	0.000059	0.00020		mg/L	1	5/29/2015 2:57:39 PM	19430
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	3.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Acenaphthylene	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Aniline	ND	3.1	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Anthracene	ND	3.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Azobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benz(a)anthracene	ND	5.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(a)pyrene	ND	5.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(b)fluoranthene	ND	4.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(g,h,i)perylene	ND	6.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
[illegible]zo(k)fluoranthene	ND	5.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
[illegible]zoic acid	ND	2.1	40		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzyl alcohol	ND	2.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-chloroethoxy)methane	ND	3.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-chloroethyl)ether	ND	3.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-chloroisopropyl)ether	ND	4.1	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-ethylhexyl)phthalate	ND	6.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Bromophenyl phenyl ether	ND	2.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Butyl benzyl phthalate	ND	4.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Carbazole	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Chloro-3-methylphenol	ND	2.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Chloroaniline	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Chloronaphthalene	ND	3.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Chlorophenol	ND	2.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Chlorophenyl phenyl ether	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Chrysene	ND	4.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Di-n-butyl phthalate	ND	4.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Di-n-octyl phthalate	ND	3.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Dibenz(a,h)anthracene	ND	6.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Dibenzofuran	ND	3.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1,2-Dichlorobenzene	ND	3.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1,3-Dichlorobenzene	ND	3.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505700-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-12-GW
Collection Date: 5/14/2015 12:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
3,3'-Dichlorobenzidine	ND	5.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Diethyl phthalate	ND	3.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Dimethyl phthalate	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dichlorophenol	ND	2.8	40		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dimethylphenol	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4,6-Dinitro-2-methylphenol	ND	2.7	40		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dinitrophenol	ND	2.1	40		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dinitrotoluene	ND	2.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2,6-Dinitrotoluene	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Fluoranthene	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Fluorene	ND	3.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachlorobutadiene	ND	3.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachlorocyclopentadiene	ND	2.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachloroethane	ND	3.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Indeno(1,2,3-cd)pyrene	ND	4.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
`horone	ND	3.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
.ethylnaphthalene	ND	3.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Methylnaphthalene	ND	4.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Methylphenol	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
3+4-Methylphenol	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
N-Nitrosodi-n-propylamine	ND	4.1	20		µg/L	1	5/26/2015 3:06:29 PM	19344
N-Nitrosodimethylamine	ND	2.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
N-Nitrosodiphenylamine	ND	4.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Naphthalene	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Nitroaniline	ND	3.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
3-Nitroaniline	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Nitroaniline	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Nitrobenzene	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Nitrophenol	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Nitrophenol	ND	2.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Pentachlorophenol	ND	2.3	40		µg/L	1	5/26/2015 3:06:29 PM	19344
Phenanthrene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Phenol	ND	2.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Pyrene	ND	4.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Pyridine	ND	3.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1,2,4-Trichlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4,5-Trichlorophenol	ND	3.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505700-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-12-GW
Collection Date: 5/14/2015 12:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Surr: 2-Fluorophenol	40.3	0	14.9-111		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: Phenol-d5	30.2	0	11.3-108		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: 2,4,6-Tribromophenol	62.2	0	15.7-154		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: Nitrobenzene-d5	65.4	0	47.8-106		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: 2-Fluorobiphenyl	63.2	0	21.3-123		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: 4-Terphenyl-d14	45.3	0	14.3-135		%REC	1	5/26/2015 3:06:29 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.47	0.13	2.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
Toluene	ND	0.22	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Ethylbenzene	ND	0.20	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Methyl tert-butyl ether (MTBE)	13	0.35	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,4-Trimethylbenzene	0.66	0.32	2.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
1,3,5-Trimethylbenzene	ND	0.25	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Naphthalene	0.52	0.44	4.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
ethylnaphthalene	ND	1.1	8.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Methylnaphthalene	1.5	1.2	8.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
Acetone	3.4	1.9	20	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Butanone	ND	0.73	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505700-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-12-GW
Collection Date: 5/14/2015 12:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1-Dichloroethane	ND	0.80	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Isopropylbenzene	ND	0.30	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
4-Isopropyltoluene	ND	0.38	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
n-Butylbenzene	ND	0.49	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
n-Propylbenzene	ND	0.33	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Butylbenzene	ND	0.46	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
[illegible]ene	ND	0.21	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Xylenes, Total	ND	0.56	3.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
Surr: 4-Bromofluorobenzene	105	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
Surr: Dibromofluoromethane	97.5	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
Surr: Toluene-d8	99.1	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505700-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-12-GW
Collection Date: 5/14/2015 12:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.080	0.10		mg/L	2	5/20/2015 3:49:54 PM	R26322
Surr: BFB	103	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505700-002
Matrix: TRIP BLANK
Client Sample ID: Trip Blank
Collection Date:
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Toluene	0.14	0.11	1.0	J	µg/L	1	5/20/2015 5:16:05 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2,4-Trimethylbenzene	0.18	0.16	1.0	J	µg/L	1	5/20/2015 5:16:05 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
'bon disulfide	ND	0.67	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
..bon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505700-002
Matrix: TRIP BLANK
Client Sample ID: Trip Blank
Collection Date:
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 5:16:05 PM	R26322
Surr: 1,2-Dichloroethane-d4	98.4	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
Surr: Dibromofluoromethane	97.5	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
Surr: Toluene-d8	101	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 5:16:05 PM	R26322
Surr: BFB	98.1	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

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Mt. Juliet, TN 37122
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765935-01

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505700-001G SWMU 10-12-GW

Project # :

Collected By :
Collection Date : 05/14/15 12:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	9012B	05/28/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: Printed: 06/02/15 11:33

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Fax (615) 758-5859

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Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765935-02

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505700-001H SWMU 10-12-GW

Project # :

Collected By :
Collection Date : 05/14/15 12:55

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	7199	05/26/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: Printed: 06/02/15 11:33
L765935-02 (CR6ICFFP) - pH=7.50

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Tax I.D. 62-0814289

Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765935

June 02, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765935-02
WG791484: R3039673: L765935-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals		
Client ID:	PBW	Batch ID:	R26265	RunNo:	26265		
Prep Date:		Analysis Date:	5/18/2015	SeqNo:	780003	Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Silver	ND	0.0050								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Metals		
Client ID:	LCSW	Batch ID:	R26265	RunNo:	26265		
Prep Date:		Analysis Date:	5/18/2015	SeqNo:	780004	Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.4	85	115			
Iron	0.46	0.020	0.5000	0	92.3	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals		
Client ID:	PBW	Batch ID:	19333	RunNo:	26358		
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	783226	Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-19333	SampType:	LCS	TestCode:	EPA Method 200.7: Metals		
Client ID:	LCSW	Batch ID:	19333	RunNo:	26358		
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	783227	Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-19333**	SampType: **LCS**		TestCode: **EPA Method 200.7: Metals**	
Client ID:	**LCSW**	Batch ID: **19333**		RunNo: **26358**	
Prep Date:	**5/20/2015**	Analysis Date: **5/21/2015**		SeqNo: **783227**	Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26242** RunNo: **26242**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **779016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26242** RunNo: **26242**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **779017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
C	0.50	0.0060	0.5000	0	99.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.2	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26265** RunNo: **26265**
Prep Date: Analysis Date: **5/18/2015** SeqNo: **780132** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Silver	ND	0.0050								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26265** RunNo: **26265**
Prep Date: Analysis Date: **5/18/2015** SeqNo: **780133** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Iron	0.45	0.020	0.5000	0	90.7	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Date: Analysis Date: **5/19/2015** SeqNo: **781115** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB-19333** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **19333** RunNo: **26348**
Prep Date: **5/20/2015** Analysis Date: **5/21/2015** SeqNo: **782930** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals		
Client ID:	PBW	Batch ID:	19333	RunNo:	26348		
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	782930	Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals		
Client ID:	PBW	Batch ID:	19333	RunNo:	26606		
Prep Date:	5/20/2015	Analysis Date:	6/3/2015	SeqNo:	792073	Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Date: Analysis Date: **5/19/2015** SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19430**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19430**	RunNo:	**26501**
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787526** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19430**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19430**	RunNo:	**26501**
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787527** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.8	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Sulfate	ND	0.500								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.508	0.100	0.5000	0	102	90	110			
Chloride	4.98	0.500	5.000	0	99.7	90	110			
Sulfate	10.2	0.500	10.00	0	102	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**	
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
C disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1 ichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**

Client ID: **LCSW** Batch ID: **R26322** RunNo: **26322**

Prep Date: Analysis Date: **5/20/2015** SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
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- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3'-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**	
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
N[illegible]alene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	14.3	135			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19344** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **19344** RunNo: **26418**
Prep Date: **5/21/2015** Analysis Date: **5/26/2015** SeqNo: **785103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID **lcsd-19344** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02** Batch ID: **19344** RunNo: **26418**
Prep Date: **5/21/2015** Analysis Date: **5/26/2015** SeqNo: **785105** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	21.3	123	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcsd-19344**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **LCSS02**	Batch ID: **19344**	RunNo: **26418**	
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785105**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57.3		100.0		57.3	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505700**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782177** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782181** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Sample ID **1505700-001B MS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-12-GW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782185** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.93	0.10	1.000	0	93.0	56.9	133			
BFB	19		20.00		94.5	70	130			

Sample ID **1505700-001B MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SWMU 10-12-GW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782186** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.95	0.10	1.000	0	95.5	56.9	133	2.63	20	
Surr: BFB	21		20.00		103	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505700** RcptNo: **1**

Received by/date: 05/15/15

Logged By: **Lindsay Mangin** **5/15/2015 8:55:00 AM**

Completed By: **Lindsay Mangin** **5/15/2015 9:39:26 AM**

Reviewed By: 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☑ CS 05/15/15
9. Was preservative added to bottles? Yes ☑ No ☒ NA ☐
   CS 05/15/15 Samples-001A (3 of 3)
10. VOA vials have zero headspace? Yes ☒ No ☑ No VOA Vials ☐ ~~002A~~ -001B (all have bubbles)
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels? Yes ☒ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met? Yes ☒ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)
Adjusted? Yes
Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks: For metals analysis, added 2ml HNO3 for acceptable pH. Held in Login for 24 hours. For 300 analysis, poured off from a 1L Amber into a 500ml plastic. CS 05/15

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Approximately 250 ml from plastic bottle used for 8270 analysis due to low sample volume. KMS 5/21/15.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package: Standard ☒ Level 4 (Full Validation)
Accreditation: NELAP ☐ Other
EDD (Type): EXCEL

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505700	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL DISSOLVED)	GEN CHEM	CR6		Air Bubbles (Y or N)
14.15	1255	WATER	SWMU 10-12-GW	40 ML VOA-6	HCL	-001			✓							✓						
				1L AMBER-2	—	-001											✓		✓			
				250 ML AMBER-1	—	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	NaOH	-001							✓									
				50 ML PLASTIC-1	NH_4SO_4	-001														✓		
14.15	—	WATER	TRIP BLANK	40 ML VOA-4	HCL	-002										✓						

Date:	Time:	Relinquished by:	Received by:	Date	Time
4.15	1315	[signature]	[signature]	5/14/15	1315
5-15-15	8:55	[signature]	[signature]	05/15/15	0855

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 25, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505701

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 25, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1505701**
Date Reported: **6/25/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505701-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-14-GW
Collection Date: 5/14/2015 10:00:00 AM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/15/2015 8:11:26 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 8:11:26 PM	19246
Surr: DNOP	127	0	76.5-150		%REC	1	5/15/2015 8:11:26 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	1.3	0.15	0.50		mg/L	5	5/15/2015 7:03:29 PM	R26247
Chloride	370	2.7	10		mg/L	20	5/15/2015 7:15:53 PM	R26247
Sulfate	370	2.3	10		mg/L	20	5/15/2015 7:15:53 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.18	0.00095	0.0020		mg/L	1	5/15/2015 5:31:58 PM	R26242
Beryllium	0.00090	0.00031	0.0020	J	mg/L	1	5/15/2015 5:31:58 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/18/2015 7:23:18 PM	R26265
Chromium	0.0075	0.0018	0.0060		mg/L	1	5/15/2015 5:31:58 PM	R26242
Cobalt	0.0051	0.0013	0.0060	J	mg/L	1	5/15/2015 5:31:58 PM	R26242
Iron	3.9	0.036	0.10	*	mg/L	5	5/18/2015 7:25:35 PM	R26265
Manganese	1.1	0.0013	0.010	*	mg/L	5	5/18/2015 7:25:35 PM	R26265
Nickel	0.011	0.0021	0.010		mg/L	1	5/15/2015 5:31:58 PM	R26242
[illegible]r	ND	0.0012	0.0050		mg/L	1	5/18/2015 7:23:18 PM	R26265
[illegible]adium	0.016	0.0015	0.050	J	mg/L	1	5/15/2015 5:31:58 PM	R26242
Zinc	0.014	0.0028	0.010		mg/L	1	5/15/2015 5:31:58 PM	R26242
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	7.0	0.048	0.10	*	mg/L	50	5/21/2015 3:45:07 PM	19333
Beryllium	0.035	0.0016	0.010	*	mg/L	5	5/21/2015 3:22:30 PM	19333
Cadmium	ND	0.0048	0.010		mg/L	5	5/21/2015 3:22:30 PM	19333
Chromium	0.15	0.011	0.030	*	mg/L	5	5/21/2015 3:22:30 PM	19333
Cobalt	0.13	0.0063	0.030		mg/L	5	5/21/2015 3:22:30 PM	19333
Iron	130	3.6	10	*	mg/L	500	5/21/2015 3:46:56 PM	19333
Manganese	22	0.076	0.10	*	mg/L	50	5/21/2015 3:45:07 PM	19333
Nickel	0.25	0.011	0.050	*	mg/L	5	5/21/2015 3:22:30 PM	19333
Silver	ND	0.011	0.025		mg/L	5	5/21/2015 3:22:30 PM	19333
Vanadium	0.16	0.0075	0.25	J	mg/L	5	5/21/2015 3:22:30 PM	19333
Zinc	0.36	0.018	0.050		mg/L	5	5/21/2015 3:22:30 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.00014	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
Arsenic	0.0030	0.000065	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
Lead	0.0068	0.000026	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
Selenium	0.0031	0.00019	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
EPA 200.8: METALS							Analyst: **TES**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505701-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-14-GW
Collection Date: 5/14/2015 10:00:00 AM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **TES**	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 2:24:54 PM	19333
Arsenic	0.029	0.0029	0.010	*	mg/L	10	5/21/2015 2:59:50 PM	19333
Lead	0.24	0.00047	0.0050	*	mg/L	10	5/21/2015 2:59:50 PM	19333
Selenium	0.010	0.0039	0.020	J	mg/L	20	5/21/2015 3:02:54 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	0.00021	0.000059	0.00020		mg/L	1	5/29/2015 2:59:44 PM	19430
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
Acenaphthene	ND	3.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Acenaphthylene	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Aniline	ND	3.1	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Anthracene	ND	3.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Azobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benz(a)anthracene	ND	5.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(a)pyrene	ND	5.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(b)fluoranthene	ND	4.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(g,h,i)perylene	ND	6.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
[illegible]zo(k)fluoranthene	ND	5.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
[illegible]zoic acid	ND	2.1	40		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzyl alcohol	ND	2.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-chloroethoxy)methane	ND	3.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-chloroethyl)ether	ND	3.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-chloroisopropyl)ether	ND	4.1	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-ethylhexyl)phthalate	ND	6.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Bromophenyl phenyl ether	ND	2.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Butyl benzyl phthalate	ND	4.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Carbazole	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Chloro-3-methylphenol	ND	2.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Chloroaniline	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Chloronaphthalene	ND	3.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Chlorophenol	ND	2.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Chlorophenyl phenyl ether	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Chrysene	ND	4.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Di-n-butyl phthalate	ND	4.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Di-n-octyl phthalate	ND	3.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Dibenz(a,h)anthracene	ND	6.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Dibenzofuran	ND	3.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1,2-Dichlorobenzene	ND	3.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1,3-Dichlorobenzene	ND	3.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505701-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-14-GW
Collection Date: 5/14/2015 10:00:00 AM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
1,4-Dichlorobenzene	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
3,3'-Dichlorobenzidine	ND	5.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Diethyl phthalate	ND	3.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Dimethyl phthalate	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dichlorophenol	ND	2.8	40		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dimethylphenol	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4,6-Dinitro-2-methylphenol	ND	2.7	40		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dinitrophenol	ND	2.1	40		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dinitrotoluene	ND	2.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2,6-Dinitrotoluene	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Fluoranthene	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Fluorene	ND	3.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachlorobutadiene	ND	3.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachlorocyclopentadiene	ND	2.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachloroethane	ND	3.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Indeno(1,2,3-cd)pyrene	ND	4.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
' 'horone	ND	3.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
.ethylnaphthalene	ND	3.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Methylnaphthalene	ND	4.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Methylphenol	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
3+4-Methylphenol	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
N-Nitrosodi-n-propylamine	ND	4.1	20		µg/L	1	5/26/2015 3:34:14 PM	19344
N-Nitrosodimethylamine	ND	2.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
N-Nitrosodiphenylamine	ND	4.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Naphthalene	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Nitroaniline	ND	3.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
3-Nitroaniline	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Nitroaniline	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Nitrobenzene	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Nitrophenol	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Nitrophenol	ND	2.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Pentachlorophenol	ND	2.3	40		µg/L	1	5/26/2015 3:34:14 PM	19344
Phenanthrene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Phenol	ND	2.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Pyrene	ND	4.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Pyridine	ND	3.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1,2,4-Trichlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4,5-Trichlorophenol	ND	3.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505701-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-14-GW
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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Surr: 2-Fluorophenol	63.6	0	14.9-111		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: Phenol-d5	46.6	0	11.3-108		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: 2,4,6-Tribromophenol	87.7	0	15.7-154		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: Nitrobenzene-d5	88.7	0	47.8-106		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: 2-Fluorobiphenyl	86.8	0	21.3-123		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: 4-Terphenyl-d14	59.6	0	14.3-135		%REC	1	5/26/2015 3:34:14 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.47	0.13	2.0	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
Toluene	0.30	0.22	2.0	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
Ethylbenzene	ND	0.20	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Methyl tert-butyl ether (MTBE)	16	0.35	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,4-Trimethylbenzene	0.44	0.32	2.0	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
1,3,5-Trimethylbenzene	ND	0.25	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Naphthalene	ND	0.44	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
ethylnaphthalene	ND	1.1	8.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Methylnaphthalene	ND	1.2	8.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Acetone	2.7	1.9	20	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Butanone	ND	0.73	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

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Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1-Dichloroethane	ND	0.80	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Isopropylbenzene	ND	0.30	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
4-Isopropyltoluene	ND	0.38	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
n-Butylbenzene	ND	0.49	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
n-Propylbenzene	ND	0.33	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
[illegible] Butylbenzene	ND	0.46	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
[illegible]ene	ND	0.21	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Xylenes, Total	ND	0.56	3.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
Surr: 4-Bromofluorobenzene	104	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
Surr: Dibromofluoromethane	96.1	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
Surr: Toluene-d8	96.7	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

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Project: SWMU 10
Lab ID: 1505701-001 **Matrix:** AQUEOUS

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Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.080	0.10		mg/L	2	5/20/2015 5:44:48 PM	R26322
Surr: BFB	96.9	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505701-002
Matrix: TRIP BLANK
Client Sample ID: Trip Blank
Collection Date:
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
[illegible]bon disulfide	ND	0.67	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
[illegible]bon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322

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CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505701-002 **Matrix:** TRIP BLANK

Client Sample ID: Trip Blank
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Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
[illegible]3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
[illegible],4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 6:13:33 PM	R26322
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
Surr: Dibromofluoromethane	107	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
Surr: Toluene-d8	92.7	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 6:13:33 PM	R26322
Surr: BFB	97.1	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765939-01

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505701-001G SWMU 10-14-GW

Project # :

Collected By :
Collection Date : 05/14/15 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	9012B	05/28/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 06/02/15 11:32 Printed: 06/02/15 11:35

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765939-02

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505701-001H SWMU 10-14-GW

Project # :

Collected By :
Collection Date : 05/14/15 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	7199	05/26/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 06/02/15 11:32 Printed: 06/02/15 11:35

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Est. 1970

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765939

June 02, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
xavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765939-02
WG791484: R3039673: L765939-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **R26265** RunNo: **26265**

Prep Date: Analysis Date: **5/18/2015** SeqNo: **780003** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **R26265** RunNo: **26265**

Prep Date: Analysis Date: **5/18/2015** SeqNo: **780004** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.4	85	115			
Iron	0.46	0.020	0.5000	0	92.3	85	115			
Manganese	0.47	0.0020	0.5000	0	93.2	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Sample ID **MB-19333** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**

Client ID: **PBW** Batch ID: **19333** RunNo: **26358**

Prep Date: **5/20/2015** Analysis Date: **5/21/2015** SeqNo: **783226** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS-19333** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**

Client ID: **LCSW** Batch ID: **19333** RunNo: **26358**

Prep Date: **5/20/2015** Analysis Date: **5/21/2015** SeqNo: **783227** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**LCS-19333**	SampType: **LCS**		TestCode: **EPA Method 200.7: Metals**	
Client ID:	**LCSW**	Batch ID: **19333**		RunNo: **26358**	
Prep Date:	**5/20/2015**	Analysis Date: **5/21/2015**		SeqNo: **783227**	Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26242** RunNo: **26242**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **779016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26242** RunNo: **26242**
Prep Date: Analysis Date: **5/15/2015** SeqNo: **779017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
N	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26265** RunNo: **26265**
Prep Date: Analysis Date: **5/18/2015** SeqNo: **780132** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26265** RunNo: **26265**
Prep Date: Analysis Date: **5/18/2015** SeqNo: **780133** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Iron	0.45	0.020	0.5000	0	90.7	85	115			
Manganese	0.46	0.0020	0.5000	0	91.7	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals
Client ID:	LCSW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781112 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals
Client ID:	LCSW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781113 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781115 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781116 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	19333	RunNo:	26348
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	782930 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	19333	RunNo:	26348
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	782930
Units:	mg/L				

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	19333	RunNo:	26606
Prep Date:	5/20/2015	Analysis Date:	6/3/2015	SeqNo:	792073
Units:	mg/L				

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals
Client ID:	LCSW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781144 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals
Client ID:	LCSW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781145 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals
Client ID:	PBW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781146 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals
Client ID:	PBW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781147 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19430**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19430**	RunNo:	**26501**
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787526** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19430**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19430**	RunNo:	**26501**
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787527** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.8	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Sulfate	ND	0.500								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.508	0.100	0.5000	0	102	90	110			
Chloride	4.98	0.500	5.000	0	99.7	90	110			
Sulfate	10.2	0.500	10.00	0	102	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**		
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**		
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**		
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**		
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**	
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
C disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1, chlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**			TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **LCSW**	Batch ID: **R26322**			RunNo: **26322**						
Prep Date:	Analysis Date: **5/20/2015**			SeqNo: **782103**		Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**	
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3'-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19344**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19344**	RunNo: **26418**	
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **785101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
N[illegible]ilene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19344** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSW** Batch ID: **19344** RunNo: **26418**

Prep Date: **5/21/2015** Analysis Date: **5/26/2015** SeqNo: **785103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID **lcsd-19344** SampType: **LCSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS02** Batch ID: **19344** RunNo: **26418**

Prep Date: **5/21/2015** Analysis Date: **5/26/2015** SeqNo: **785105** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	21.3	123	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**lcsd-19344**	SampType:	**LCSD**		TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID:	**19344**		RunNo:	**26418**					
Prep Date:	**5/21/2015**	Analysis Date:	**5/26/2015**		SeqNo:	**785105**	Units:	**µg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14		57.3		100.0		57.3	14.3	135	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
h	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505701**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782177** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782181** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505701** RcptNo: **1**

Received by/date: 05/15/15

Logged By: **Lindsay Mangin** **5/15/2015 8:55:00 AM**

Completed By: **Lindsay Mangin** **5/15/2015 9:42:52 AM**

Reviewed By: 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☑ CS 05/15/15
9. Was preservative added to bottles? Yes ☑ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☑ No VOA Vials ☐ CS 05/15/15 Sample -001B (3 of 3) has a bubble.
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels? Yes ☒ No ☐
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met? Yes ☒ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: 2, 1 (<2 or >12 unless noted)
Adjusted? yes
Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks: For metals analysis, added 2ml HNO_3 for acceptable pH. Held in Login for 24 hours. For 300 analysis, poured off from a 1L Amber into a 500. plastic. CS 05/15/15

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Approximately 250mL from plastic bottle used for 8270 analysis due to low sample volume. KMS. 5/21/15

Chain f-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505701	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR6		Air Bubbles (Y or N)
5.14.15	1000	WATER	SWMU 10-14-GW	40 ML VOA-6	HCL	-001			✓							✓						
				1 L AMBER-2	—	-001											✓		✓			
				250 ML AMBER-1	—	-001				✓												
				100 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	HNO_3	-001												✓				
				500 ML PLASTIC-1	NaOH	-001							✓									
				50 ML PLASTIC-1	NH_4SO_4	-001														✓		
5.14.15	—	WATER	TRIP BLANK	40 ML VOA-4	HCL	-002										✓						

Date	Time	Relinquished by:	Received by:	Date	Time
5.14.15	1315	[signature]	[signature]	5-14-15	1315
5/14/15	855	[signature]	[signature]	05/15/15	0855

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505705

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 25, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (2-4')
Collection Date: 5/13/2015 3:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/20/2015 9:51:39 AM	19293
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/20/2015 9:51:39 AM	19293
Surr: DNOP	97.0	0	57.9-140		%REC	1	5/20/2015 9:51:39 AM	19293
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	11	1.0	1.0		wt%	1	5/15/2015 11:35:00 AM	R26235
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0048	0.0032	0.036	J	mg/Kg-dr	1	6/2/2015 10:06:43 AM	19476
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Arsenic	1.8	0.66	5.6	J	mg/Kg-dr	2	5/20/2015 12:09:32 PM	19279
Barium	500	0.067	0.22		mg/Kg-dr	2	5/20/2015 12:09:32 PM	19279
Beryllium	0.79	0.0083	0.17		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Chromium	9.3	0.068	0.34		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Cobalt	4.4	0.043	0.34		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Iron	15000	68	280		mg/Kg-dr	100	5/20/2015 10:32:29 AM	19279
[illegible]	2.9	0.12	0.28		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Manganese	460	0.13	0.22		mg/Kg-dr	2	5/20/2015 12:09:32 PM	19279
Nickel	7.7	0.14	0.56		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Vanadium	21	0.038	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Zinc	15	0.72	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Aniline	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzyl alcohol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (2-4')
Collection Date: 5/13/2015 3:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.085	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Dichlorobenzene	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
3,3'-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dinitrophenol	ND	0.046	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachlorocyclopentadiene	ND	0.078	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachloroethane	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (2-4')
Collection Date: 5/13/2015 3:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Nitrophenol	ND	0.096	0.28		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Surr: 2-Fluorophenol	49.8		26.4-129		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: Phenol-d5	55.4		34.8-118		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: 2,4,6-Tribromophenol	52.3		26.8-128		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: Nitrobenzene-d5	55.7		35.8-124		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: 2-Fluorobiphenyl	56.7		24.5-139		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: 4-Terphenyl-d14	54.9		29.4-129		%REC	1	5/21/2015 1:41:40 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00112	0.000466	0.00207	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Toluene	0.00104	0.000215	0.00207	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Ethylbenzene	ND	0.000348	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Xylenes, Total	ND	0.00123	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Methyl tert-butyl ether (MTBE)	ND	0.000868	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,4-Trimethylbenzene	ND	0.000541	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,3,5-Trimethylbenzene	ND	0.000363	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dichloroethane (EDC)	ND	0.000555	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dibromoethane (EDB)	ND	0.000248	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Naphthalene	ND	0.000677	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1-Methylnaphthalene	ND	0.000813	0.00414		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Methylnaphthalene	ND	0.000809	0.00414		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Acetone	0.0254	0.00129	0.0104		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Bromobenzene	ND	0.000576	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (2-4')
Collection Date: 5/13/2015 3:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000280	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Bromoform	ND	0.000536	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Bromomethane	ND	0.00122	0.00311		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Butanone	0.00304	0.000663	0.0104	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Carbon tetrachloride	ND	0.000375	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chlorobenzene	ND	0.000210	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chloroform	ND	0.000426	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chloromethane	ND	0.000244	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Chlorotoluene	ND	0.000404	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Carbon disulfide	ND	0.000937	0.0104		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
4-Chlorotoluene	ND	0.000399	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
cis-1,2-DCE	ND	0.000548	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
cis-1,3-Dichloropropene	ND	0.00207	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dibromo-3-chloropropane	ND	0.000608	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dibromochloromethane	ND	0.000232	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dibromomethane	ND	0.00118	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dichlorobenzene	ND	0.000459	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dichlorobenzene	ND	0.000351	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,4-Dichlorobenzene	ND	0.000325	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dichlorodifluoromethane	ND	0.000845	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1-Dichloroethane	ND	0.000484	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1-Dichloroethene	ND	0.000346	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dichloropropane	ND	0.000442	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,3-Dichloropropane	ND	0.000322	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2,2-Dichloropropane	ND	0.000360	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1-Dichloropropene	ND	0.000379	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Hexachlorobutadiene	ND	0.000418	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Isopropylbenzene	ND	0.000480	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
4-Isopropyltoluene	ND	0.000803	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Methylene chloride	ND	0.000512	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
n-Butylbenzene	ND	0.000850	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Hexanone	0.000787	0.000431	0.0104	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
n-Propylbenzene	ND	0.000388	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
sec-Butylbenzene	ND	0.000523	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Styrene	ND	0.000343	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
4-Methyl-2-pentanone	ND	0.000874	0.0104		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
tert-Butylbenzene	ND	0.000317	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1,1,2-Tetrachloroethane	ND	0.000337	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (2-4')
Collection Date: 5/13/2015 3:55:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000455	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Tetrachloroethene (PCE)	ND	0.000410	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
trans-1,2-DCE	ND	0.000335	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
trans-1,3-Dichloropropene	ND	0.000271	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,3-Trichlorobenzene	ND	0.000757	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,4-Trichlorobenzene	ND	0.000776	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1,1-Trichloroethane	ND	0.000295	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1,2-Trichloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Trichloroethene (TCE)	ND	0.000411	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Trichlorofluoromethane	ND	0.000418	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,3-Trichloropropane	ND	0.000727	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Vinyl chloride	ND	0.000236	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Surr: 1,2-Dichloroethane-d4	91.7	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
Surr: 4-Bromofluorobenzene	104	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
Surr: Dibromofluoromethane	90.0	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
Surr: Toluene-d8	86.9	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.75	3.0		mg/Kg-dr	1	5/15/2015 6:34:28 PM	R26221
Surr: BFB	107	0	67.4-150		%REC	1	5/15/2015 6:34:28 PM	R26221

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (4-5.5')
Collection Date: 5/13/2015 4:10:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg	1	5/20/2015 10:13:02 AM	19293
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	5/20/2015 10:13:02 AM	19293
Surr: DNOP	95.0	0	57.9-140		%REC	1	5/20/2015 10:13:02 AM	19293
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	9.9	1.0	1.0		wt%	1	5/15/2015 11:35:00 AM	R26235
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0037	0.0030	0.034	J	mg/Kg-dr	1	6/2/2015 10:08:29 AM	19476
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Arsenic	1.4	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Barium	430	0.065	0.22		mg/Kg-dr	2	5/20/2015 12:16:52 PM	19279
Beryllium	0.73	0.0081	0.16		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Chromium	8.8	0.066	0.33		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Cobalt	4.2	0.041	0.33		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Iron	15000	66	270		mg/Kg-dr	100	5/20/2015 10:33:51 AM	19279
[illegible]	3.0	0.12	0.27		mg/Kg-dr	1	5/20/2015 1:25:39 PM	19279
Manganese	240	0.064	0.11		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Nickel	7.2	0.14	0.55		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Vanadium	22	0.037	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Zinc	14	0.70	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Anthracene	ND	0.094	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benz(a)anthracene	ND	0.087	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (4-5.5')
Collection Date: 5/13/2015 4:10:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
3,3'-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dimethylphenol	ND	0.087	0.33		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dinitrotoluene	ND	0.099	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachlorocyclopentadiene	ND	0.077	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (4-5.5')
Collection Date: 5/13/2015 4:10:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
N-Nitrosodiphenylamine	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Pyridine	ND	0.093	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Surr: 2-Fluorophenol	57.0		26.4-129		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: Phenol-d5	66.3		34.8-118		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: 2,4,6-Tribromophenol	69.1		26.8-128		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: Nitrobenzene-d5	61.2		35.8-124		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: 2-Fluorobiphenyl	62.1		24.5-139		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: 4-Terphenyl-d14	65.3		29.4-129		%REC	1	5/21/2015 2:09:19 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.00221	0.000430	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Toluene	0.00151	0.000199	0.00191	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Ethylbenzene	0.000401	0.000321	0.00191	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Xylenes, Total	ND	0.00114	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Methyl tert-butyl ether (MTBE)	ND	0.000801	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,4-Trimethylbenzene	ND	0.000499	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,3,5-Trimethylbenzene	ND	0.000335	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dichloroethane (EDC)	ND	0.000512	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dibromoethane (EDB)	ND	0.000228	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Naphthalene	ND	0.000624	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1-Methylnaphthalene	ND	0.000750	0.00382		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Methylnaphthalene	ND	0.000746	0.00382		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Acetone	0.00651	0.00119	0.00955	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Bromobenzene	ND	0.000531	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (4-5.5')
Collection Date: 5/13/2015 4:10:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000258	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Bromoform	ND	0.000495	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Bromomethane	ND	0.00113	0.00287		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Butanone	0.00146	0.000612	0.00955	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Carbon tetrachloride	ND	0.000346	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chlorobenzene	ND	0.000194	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chloroethane	ND	0.00191	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chloroform	ND	0.000393	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chloromethane	ND	0.000225	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Chlorotoluene	ND	0.000373	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Carbon disulfide	ND	0.000864	0.00955		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
4-Chlorotoluene	ND	0.000368	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
cis-1,2-DCE	ND	0.000505	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
cis-1,3-Dichloropropene	ND	0.00191	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dibromo-3-chloropropane	ND	0.000561	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Dibromochloromethane	ND	0.000214	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Dibromomethane	ND	0.00108	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Dichlorobenzene	ND	0.000424	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
-Dichlorobenzene	ND	0.000324	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,4-Dichlorobenzene	ND	0.000300	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Dichlorodifluoromethane	ND	0.000780	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1-Dichloroethane	ND	0.000446	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1-Dichloroethene	ND	0.000319	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dichloropropane	ND	0.000408	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,3-Dichloropropane	ND	0.000297	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2,2-Dichloropropane	ND	0.000332	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1-Dichloropropene	ND	0.000350	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Hexachlorobutadiene	ND	0.000385	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Isopropylbenzene	ND	0.000443	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
4-Isopropyltoluene	ND	0.000741	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Methylene chloride	0.000506	0.000472	0.00191	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
n-Butylbenzene	ND	0.000784	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Hexanone	0.000669	0.000397	0.00955	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
n-Propylbenzene	ND	0.000358	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
sec-Butylbenzene	ND	0.000482	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Styrene	ND	0.000317	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
4-Methyl-2-pentanone	ND	0.000807	0.00955		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
tert-Butylbenzene	ND	0.000293	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1,1,2-Tetrachloroethane	ND	0.000311	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-002 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (4-5.5')
Collection Date: 5/13/2015 4:10:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000420	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Tetrachloroethene (PCE)	ND	0.000379	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
trans-1,2-DCE	ND	0.000309	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
trans-1,3-Dichloropropene	ND	0.000250	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,3-Trichlorobenzene	ND	0.000699	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,4-Trichlorobenzene	ND	0.000716	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1,1-Trichloroethane	ND	0.000272	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1,2-Trichloroethane	ND	0.00191	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Trichloroethene (TCE)	ND	0.000380	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Trichlorofluoromethane	ND	0.000386	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,3-Trichloropropane	ND	0.000671	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Vinyl chloride	ND	0.000218	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Surr: 1,2-Dichloroethane-d4	95.6	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
Surr: 4-Bromofluorobenzene	91.4	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
Surr: Dibromofluoromethane	95.3	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
Surr: Toluene-d8	84.1	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.67	2.7		mg/Kg-dr	1	5/15/2015 8:01:09 PM	R26221
Surr: BFB	110	0	67.4-150		%REC	1	5/15/2015 8:01:09 PM	R26221

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (8-9')
Collection Date: 5/13/2015 4:20:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	5.6	10		mg/Kg	1	5/20/2015 10:34:15 AM	19293
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	5/20/2015 10:34:15 AM	19293
Surr: DNOP	101	0	57.9-140		%REC	1	5/20/2015 10:34:15 AM	19293
PERCENT MOISTURE							Analyst: **BCN**	
Percent Moisture	10	1.0	1.0		wt%	1	5/15/2015 11:35:00 AM	R26235
EPA METHOD 7471: MERCURY							Analyst: **MED**	
Mercury	0.0054	0.0032	0.037	J	mg/Kg-dr	1	6/2/2015 10:10:15 AM	19476
EPA METHOD 6010B: SOIL METALS							Analyst: **ELS**	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Arsenic	1.3	0.33	2.8	J	mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Barium	55	0.034	0.11		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Beryllium	0.78	0.0084	0.17		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Chromium	10	0.068	0.34		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Cobalt	5.7	0.043	0.34		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Iron	17000	68	280		mg/Kg-dr	100	5/20/2015 10:35:13 AM	19279
[illegible]	3.3	0.12	0.28		mg/Kg-dr	1	5/20/2015 1:26:55 PM	19279
Manganese	810	0.33	0.56		mg/Kg-dr	5	5/20/2015 1:28:18 PM	19279
Nickel	10	0.15	0.56		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Vanadium	20	0.038	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Zinc	18	0.73	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Aniline	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzyl alcohol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (8-9')
Collection Date: 5/13/2015 4:20:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.085	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dichlorobenzene	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
3,3'-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dinitrophenol	ND	0.046	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachlorocyclopentadiene	ND	0.077	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachloroethane	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (8-9')
Collection Date: 5/13/2015 4:20:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
3+4-Methylphenol	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Nitrophenol	ND	0.096	0.28		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Surr: 2-Fluorophenol	66.3		26.4-129		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: Phenol-d5	69.0		34.8-118		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: 2,4,6-Tribromophenol	61.5		26.8-128		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: Nitrobenzene-d5	67.9		35.8-124		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: 2-Fluorobiphenyl	65.8		24.5-139		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: 4-Terphenyl-d14	57.8		29.4-129		%REC	1	5/21/2015 2:37:02 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Benzene	0.0176	0.000405	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Toluene	0.0135	0.000187	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Ethylbenzene	0.00347	0.000302	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Xylenes, Total	0.00946	0.00107	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Methyl tert-butyl ether (MTBE)	ND	0.000754	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,4-Trimethylbenzene	0.00269	0.000470	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,3,5-Trimethylbenzene	0.00170	0.000315	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dichloroethane (EDC)	ND	0.000482	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dibromoethane (EDB)	ND	0.000215	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Naphthalene	0.000845	0.000587	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1-Methylnaphthalene	ND	0.000706	0.00360		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Methylnaphthalene	ND	0.000702	0.00360		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Acetone	0.00313	0.00112	0.00899	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Bromobenzene	ND	0.000500	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (8-9')
Collection Date: 5/13/2015 4:20:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
Bromodichloromethane	ND	0.000243	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Bromoform	ND	0.000466	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Bromomethane	ND	0.00106	0.00270		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Butanone	0.00173	0.000576	0.00899	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Carbon tetrachloride	ND	0.000325	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chlorobenzene	ND	0.000182	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chloroethane	ND	0.00180	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chloroform	ND	0.000370	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chloromethane	ND	0.000212	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Chlorotoluene	ND	0.000351	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Carbon disulfide	ND	0.000814	0.00899		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
4-Chlorotoluene	ND	0.000346	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
cis-1,2-DCE	ND	0.000475	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
cis-1,3-Dichloropropene	ND	0.00180	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dibromo-3-chloropropane	ND	0.000528	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Dibromochloromethane	ND	0.000202	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Dibromomethane	ND	0.00102	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Dichlorobenzene	ND	0.000399	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
-Dichlorobenzene	ND	0.000305	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,4-Dichlorobenzene	ND	0.000282	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Dichlorodifluoromethane	ND	0.000734	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1-Dichloroethane	ND	0.000420	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1-Dichloroethene	ND	0.000300	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dichloropropane	ND	0.000384	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,3-Dichloropropane	ND	0.000280	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2,2-Dichloropropane	ND	0.000312	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1-Dichloropropene	ND	0.000329	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Hexachlorobutadiene	ND	0.000363	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Isopropylbenzene	0.000539	0.000417	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
4-Isopropyltoluene	ND	0.000698	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Methylene chloride	0.000611	0.000444	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
n-Butylbenzene	ND	0.000738	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Hexanone	ND	0.000374	0.00899		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
n-Propylbenzene	0.000494	0.000337	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
sec-Butylbenzene	0.000683	0.000454	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Styrene	ND	0.000298	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
4-Methyl-2-pentanone	ND	0.000759	0.00899		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
tert-Butylbenzene	ND	0.000276	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1,1,2-Tetrachloroethane	ND	0.000293	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505705-003 **Matrix:** SOIL

Client Sample ID: SWMU 10-16 (8-9')
Collection Date: 5/13/2015 4:20:00 PM
Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **RAA**	
1,1,2,2-Tetrachloroethane	ND	0.000395	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Tetrachloroethene (PCE)	ND	0.000356	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
trans-1,2-DCE	ND	0.000291	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
trans-1,3-Dichloropropene	ND	0.000235	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,3-Trichlorobenzene	ND	0.000658	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,4-Trichlorobenzene	ND	0.000674	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1,1-Trichloroethane	ND	0.000256	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1,2-Trichloroethane	ND	0.00180	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Trichloroethene (TCE)	ND	0.000357	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Trichlorofluoromethane	ND	0.000363	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,3-Trichloropropane	ND	0.000631	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Vinyl chloride	ND	0.000205	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Surr: 1,2-Dichloroethane-d4	87.5	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
Surr: 4-Bromofluorobenzene	98.5	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
Surr: Dibromofluoromethane	97.6	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
Surr: Toluene-d8	89.7	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: **cadg**	
oline Range Organics (GRO)	ND	0.73	2.9		mg/Kg-dr	1	5/15/2015 8:30:07 PM	R26221
Surr: BFB	115	0	67.4-150		%REC	1	5/15/2015 8:30:07 PM	R26221

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765944-01

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505705-001C SWMU 10-16 2-4FT

Project # :

Collected By :
Collection Date : 05/13/15 15:55

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Cyanide	U	0.039	0.25	mg/kg		9012B	05/26/15	1
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	05/22/15	1
ORP	76.			mV		2580 B-	05/23/15	1
pH	7.9	0.010	0.10	su		9045D	05/21/15	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 06/02/15 11:33 Printed: 06/02/15 11:33
L765944-01 (PH) - 7.9 at 21.5c

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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765944-02

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505705-002C SWMU 10-16 4-5.5FT

Project # :

Collected By :
Collection Date : 05/13/15 16:10

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Cyanide	U	0.039	0.25	mg/kg		9012B	05/26/15	1
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	05/22/15	1
ORP	38.			mV		2580 B-	05/23/15	1
pH	9.0	0.010	0.10	su		9045D	05/21/15	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
The reported analytical results relate only to the sample submitted.
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L765944-02 (PH) - 9.0 at 21.0c

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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765944-03

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505705-003C SWMU 10-16 8-9FT

Project # :

Collected By :
Collection Date : 05/13/15 16:20

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Cyanide	U	0.039	0.25	mg/kg		9012B	05/26/15	1
Chromium,Hexavalent	U	0.64	2.0	mg/kg		3060A/7	05/22/15	1
ORP	41.			mV		2580 B-	05/23/15	1
pH	8.8	0.010	0.10	su		9045D	05/21/15	1

U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 06/02/15 11:33 Printed: 06/02/15 11:33
L765944-03 (PH) - 8.8 at 20.9c

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765944

June 02, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chromium,Hexavalent	< 2	mg/kg			WG790681	05/22/15 14:15
Cyanide	< .25	mg/kg			WG790306	05/26/15 09:43

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.00	7.00	0.143	1	L765520-16	WG790425
pH	su	6.30	6.30	0.633	1	L766317-01	WG790425
Chromium,Hexavalent	mg/kg	0.0	0.0	0.0	20	L765944-01	WG790681
ORP	mV	54.0	56.0	3.64	20	L765419-02	WG790617
ORP	mV	46.0	45.0	2.20	20	L766227-03	WG790617
Cyanide	mg/kg	0.0	0.0	0.0	20	L765924-01	WG790306
Cyanide	mg/kg	0.0	0.0	0.0	20	L766617-01	WG790306

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.77	99.1	98.3-101.7	WG790425
romium,Hexavalent	mg/kg	59.8	59.8	100.	80-120	WG790681
ORP	mV	100	101.	101.	90-110	WG790617
Cyanide	mg/kg	101	124.	123.	50-150	WG790306

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
pH	su	7.78	7.77	99.0	98.3-101.7	0.129	20	WG790425
Chromium,Hexavalent	mg/kg	60.2	59.8	101.	80-120	0.667	20	WG790681
ORP	mV	100.	101.	100.	90-110	0.995	20	WG790617
Cyanide	mg/kg	122.	124.	121.	50-150	1.63	20	WG790306

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.8	0.0	20	99.0	75-125	L765944-01	WG790681
Cyanide	mg/kg	2.97	0.0	3.33	89.0	80-120	L765924-04	WG790306

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Hall Environmental Analysis Laboratory

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Albuquerque, NM 87109

Quality Assurance Report
Level II

L765944

June 02, 2015

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium,Hexavalent	mg/kg	19.9	19.8	99.5	75-125	0.504	20	L765944-01	WG790681
Cyanide	mg/kg	3.18	2.97	95.5	80-120	6.83	20	L765924-04	WG790306

Batch number /Run number / Sample number cross reference

WG790425: R3038502: L765944-01 02 03
WG790681: R3038806: L765944-01 02 03
WG790617: R3039123: L765944-01 02 03
WG790306: R3039168: L765944-01 02 03

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19293**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19293**	RunNo: **26304**
Prep Date: **5/19/2015**	Analysis Date: **5/20/2015**	SeqNo: **781491** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		104	57.9	140			

Sample ID **LCS-19293**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19293**	RunNo: **26304**
Prep Date: **5/19/2015**	Analysis Date: **5/20/2015**	SeqNo: **781492** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	100	67.8	130			
Surr: DNOP	5.1		5.000		101	57.9	140			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **1505705-001ams** SampType: **MS** TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **SWMU 10-16 (2-4')** Batch ID: **19243** RunNo: **26232**
Prep Date: **5/15/2015** Analysis Date: **5/15/2015** SeqNo: **778534** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0132	0.00222	0.01112	0.001118	109	33.4	127			
Toluene	0.0123	0.00222	0.01112	0.001035	101	24.8	130			
Chlorobenzene	0.0105	0.00222	0.01112	0	94.0	25.8	132			
1,1-Dichloroethene	0.0139	0.00222	0.01112	0	125	70	130			
Trichloroethene (TCE)	0.0130	0.00222	0.01112	0	117	70	130			
Surr: 1,2-Dichloroethane-d4	0.0255		0.02781		91.7	70	130			
Surr: 4-Bromofluorobenzene	0.0253		0.02781		90.8	70	130			
Surr: Dibromofluoromethane	0.0276		0.02781		99.3	70	130			
Surr: Toluene-d8	0.0261		0.02781		93.7	70	130			

Sample ID **1505705-001amsd** SampType: **MSD** TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **SWMU 10-16 (2-4')** Batch ID: **19243** RunNo: **26232**
Prep Date: **5/15/2015** Analysis Date: **5/15/2015** SeqNo: **778535** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0134	0.00224	0.01121	0.001118	110	33.4	127	1.55	20	
Toluene	0.0128	0.00224	0.01121	0.001035	105	24.8	130	4.27	20	
C[illegible]enzene	0.0113	0.00224	0.01121	0	101	25.8	132	7.68	20	
1,1-Dichloroethene	0.0140	0.00224	0.01121	0	125	70	130	0.556	20	
Trichloroethene (TCE)	0.0127	0.00224	0.01121	0	113	70	130	2.50	20	
Surr: 1,2-Dichloroethane-d4	0.0243		0.02803		86.8	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.0271		0.02803		96.8	70	130	0	0	
Surr: Dibromofluoromethane	0.0259		0.02803		92.3	70	130	0	0	
Surr: Toluene-d8	0.0269		0.02803		96.0	70	130	0	0	

Sample ID **lcs-19243** SampType: **LCS** TestCode: **Method 8260B/5035LOW: VOLATILES**
Client ID: **LCSS** Batch ID: **19243** RunNo: **26232**
Prep Date: **5/15/2015** Analysis Date: **5/15/2015** SeqNo: **778538** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.00986	0.00200	0.01000	0	98.6	70	130			
Toluene	0.00912	0.00200	0.01000	0	91.2	70	130			
Chlorobenzene	0.00864	0.00200	0.01000	0	86.4	70	130			
1,1-Dichloroethene	0.0102	0.00200	0.01000	0	102	70	130			
Trichloroethene (TCE)	0.00966	0.00200	0.01000	0	96.6	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0235		0.02500		94.2	70	130			
Surr: 4-Bromofluorobenzene	0.0219		0.02500		87.6	70	130			
Surr: Dibromofluoromethane	0.0238		0.02500		95.4	70	130			
Surr: Toluene-d8	0.0218		0.02500		87.2	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19243**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**	
Client ID: **PBS**	Batch ID: **19243**	RunNo: **26232**	
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778539**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00200								
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2 one	0.000820	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19243**	SampType:	**MBLK**		TestCode:	**Method 8260B/5035LOW: VOLATILES**					
Client ID:	**PBS**	Batch ID:	**19243**		RunNo:	**26232**					
Prep Date:	**5/15/2015**	Analysis Date:	**5/15/2015**		SeqNo:	**778539**	Units:	**mg/Kg**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,2-Dichloropropane		ND	0.00200								
1,1-Dichloropropene		ND	0.00200								
Hexachlorobutadiene		ND	0.00200								
Isopropylbenzene		ND	0.00200								
4-Isopropyltoluene		ND	0.00200								
Methylene chloride		ND	0.00200								
n-Butylbenzene		ND	0.00200								
2-Hexanone		ND	0.0100								
n-Propylbenzene		ND	0.00200								
sec-Butylbenzene		ND	0.00200								
Styrene		ND	0.00200								
4-Methyl-2-pentanone		ND	0.0100								
tert-Butylbenzene		ND	0.00200								
1,1,1,2-Tetrachloroethane		ND	0.00200								
1,1,2,2-Tetrachloroethane		ND	0.00200								
Tetrachloroethene (PCE)		ND	0.00200								
trans-1,2-DCE		ND	0.00200								
t 3-Dichloropropene		ND	0.00200								
1,2,3-Trichlorobenzene		ND	0.00200								
1,2,4-Trichlorobenzene		ND	0.00200								
1,1,1-Trichloroethane		ND	0.00200								
1,1,2-Trichloroethane		ND	0.00200								
Trichloroethene (TCE)		ND	0.00200								
Trichlorofluoromethane		ND	0.00200								
1,2,3-Trichloropropane		ND	0.00200								
Vinyl chloride		ND	0.00200								
Surr: 1,2-Dichloroethane-d4		0.0229		0.02500		91.7	70	130			
Surr: 4-Bromofluorobenzene		0.0209		0.02500		83.5	70	130			
Surr: Dibromofluoromethane		0.0224		0.02500		89.5	70	130			
Surr: Toluene-d8		0.0231		0.02500		92.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**	
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
E nzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19270**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781322** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2 niline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	3.0		3.330		89.3	26.4	129			
Surr: Phenol-d5	2.9		3.330		86.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		85.8	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		88.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		87.0	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.5	29.4	129			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19270**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS**	Batch ID: **19270**	RunNo: **26300**
Prep Date: **5/18/2015**	Analysis Date: **5/19/2015**	SeqNo: **781323** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	86.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	88.6	52.3	122			
2-Chlorophenol	2.9	0.20	3.330	0	87.7	49.9	115			
1,4-Dichlorobenzene	1.5	0.20	1.670	0	91.5	43.7	107			
2,4-Dinitrotoluene	1.2	0.50	1.670	0	74.4	36	106			
N-Nitrosodi-n-propylamine	1.3	0.20	1.670	0	80.6	39.5	110			
4-Nitrophenol	2.8	0.25	3.330	0	83.9	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	75.8	23.7	111			
Phenol	3.2	0.20	3.330	0	97.0	52.7	119			
Pyrene	1.5	0.20	1.670	0	90.1	50.4	116			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	101	40.1	114			
Surr: 2-Fluorophenol	3.3		3.330		98.7	26.4	129			
Surr: Phenol-d5	3.4		3.330		103	34.8	118			
Surr: 2,4,6-Tribromophenol	3.4		3.330		101	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.670		96.4	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		100	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.2	29.4	129			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19279	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals
Client ID:	PBS	Batch ID:	19279	RunNo:	26309
Prep Date:	5/18/2015	Analysis Date:	5/20/2015	SeqNo:	781613
				Units:	mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	0.82	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	LCS-19279	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals
Client ID:	LCSS	Batch ID:	19279	RunNo:	26309
Prep Date:	5/18/2015	Analysis Date:	5/20/2015	SeqNo:	781614
				Units:	mg/Kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	105	80	120			
Arsenic	25	2.5	25.00	0	99.0	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	26	0.15	25.00	0	106	80	120			
Cadmium	25	0.10	25.00	0	100	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Cobalt	25	0.30	25.00	0	99.6	80	120			
Iron	26	2.5	25.00	0	104	80	120			
Lead	25	0.25	25.00	0	99.1	80	120			
Manganese	25	0.10	25.00	0	100	80	120			
Nickel	25	0.50	25.00	0	99.1	80	120			
Selenium	25	2.5	25.00	0	101	80	120			
Silver	5.1	0.25	5.000	0	103	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	100	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505705**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778746** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		97.2	67.4	150			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778747** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.8	79.9	135			
Surr: BFB	480		500.0		96.4	67.4	150			

Sample ID **1505705-001b ms**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-16 (2-4')**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778757** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	11	3.0	14.94	0	73.9	65.2	156			
Surr: BFB	320		298.8		106	67.4	150			

Sample ID **1505705-001B MSD**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **SWMU 10-16 (2-4')**	Batch ID: **R26221**	RunNo: **26221**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **778758** Units: **mg/Kg-dry**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	11	3.0	14.94	0	70.6	65.2	156	4.60	20	
Surr: BFB	310		298.8		103	67.4	150	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1505705** RcptNo: 1

Received by/date: 05/15/15

Logged By: **Lindsay Mangin** **5/15/2015 8:55:00 AM**

Completed By: **Lindsay Mangin** **5/15/2015 9:53:30 AM**

Reviewed By: 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐ # of preserved bottles checked for pH: (<2 or >12 unless noted)
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐ Checked by:
    (If no, notify customer for authorization.)

Special Handling (If applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain of-Custody Record

Client: WESTERN REFINING SW, INC. GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING ROAD GALLUP, NM 87301
Phone #: 505-772-0231
email or Fax# CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505705	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS & CYANIDE (SEE ATTACHED SHEET)			Air Bubbles (Y or N)
5-13-15	1555	SOIL	SWMU 10-16(2-4')	2 JARS	—	-001			✓							✓	✓	✓			
				2 VIALS	MeOH	-001										✓					
				2 VIALS	SOBI	-001										✓					
	1610		SWMU 10-16(4-5.5')	2 JARS	—	-002			✓ KMS 5/21/15							✓	✓	✓			
				2 VIALS	MeOH	-002										✓					
				2 VIALS	SOBI	-002										✓					
	1620		SWMU 10-16(8-9')	2 JARS	—	-003			✓ KMS 5/21/15							✓	✓	✓			
				2 VIALS	MeOH	-003										✓					
				2 VIALS	SOBI	-003										✓					

Date	Time	Relinquished by:	Received by:	Date	Time
5-14-15	0717			5/14/15	0717
5-15-15	8:55			05/15/15	0855

Remarks: Per Cheryl Johnson, Analyzed 1505705-002 and -003 for 8015 TPH. KMS 5/21/15

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505708

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 26, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505708-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-15-GW
Collection Date: 5/14/2015 4:00:00 PM
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	1.0	0.91	1.0		mg/L	1	5/15/2015 9:05:01 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 9:05:01 PM	19246
Surr: DNOP	125	0	76.5-150		%REC	1	5/15/2015 9:05:01 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	0.55	0.15	0.50		mg/L	5	5/21/2015 12:19:15 AM	R26328
Chloride	2300	27	100		mg/L	200	5/21/2015 12:31:40 AM	R26328
Sulfate	440	2.3	10		mg/L	20	5/15/2015 6:26:16 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.22	0.00095	0.0020		mg/L	1	5/15/2015 5:35:46 PM	R26242
Beryllium	ND	0.00031	0.0020		mg/L	1	5/15/2015 5:35:46 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/19/2015 5:01:37 PM	R26291
Chromium	0.0094	0.0018	0.0060		mg/L	1	5/15/2015 5:35:46 PM	R26242
Cobalt	0.023	0.0013	0.0060		mg/L	1	5/15/2015 5:35:46 PM	R26242
Iron	0.61	0.0073	0.020	*	mg/L	1	5/15/2015 5:35:46 PM	R26242
Manganese	2.4	0.0013	0.010	*	mg/L	5	5/19/2015 5:04:37 PM	R26291
Nickel	0.65	0.0021	0.010	*	mg/L	1	5/15/2015 5:35:46 PM	R26242
[illegible]	ND	0.0012	0.0050		mg/L	1	5/19/2015 5:01:37 PM	R26291
Vanadium	0.0057	0.0015	0.050	J	mg/L	1	5/15/2015 5:35:46 PM	R26242
Zinc	0.15	0.0028	0.010		mg/L	1	5/15/2015 5:35:46 PM	R26242
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.37	0.00095	0.0020		mg/L	1	5/21/2015 4:29:04 PM	19333
Beryllium	0.0015	0.00031	0.0020	J	mg/L	1	5/21/2015 4:29:04 PM	19333
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 4:29:04 PM	19333
Chromium	0.0062	0.0022	0.0060		mg/L	1	5/21/2015 4:29:04 PM	19333
Cobalt	0.025	0.0013	0.0060		mg/L	1	5/21/2015 4:29:04 PM	19333
Iron	9.4	0.15	0.40	*	mg/L	20	5/27/2015 3:41:18 PM	19333
Manganese	2.9	0.0076	0.010	*	mg/L	5	5/21/2015 4:30:52 PM	19333
Nickel	0.64	0.0023	0.010	*	mg/L	1	5/21/2015 4:29:04 PM	19333
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 4:29:04 PM	19333
Vanadium	0.019	0.0015	0.050	J	mg/L	1	5/21/2015 4:29:04 PM	19333
Zinc	0.046	0.0036	0.010		mg/L	1	5/21/2015 4:29:04 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.0014	0.010		mg/L	10	5/19/2015 4:42:54 PM	R26294
Arsenic	0.011	0.0013	0.020	*J	mg/L	20	5/22/2015 6:15:34 PM	R26392
Lead	0.0026	0.00026	0.010	J	mg/L	10	5/19/2015 4:42:54 PM	R26294
Selenium	0.020	0.0019	0.010		mg/L	10	5/19/2015 4:42:54 PM	R26294
EPA 200.8: METALS							Analyst: **TES**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505708-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-15-GW
Collection Date: 5/14/2015 4:00:00 PM
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **TES**	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 4:48:32 PM	19333
Arsenic	0.012	0.0015	0.0050	*	mg/L	5	5/21/2015 4:39:52 PM	19333
Lead	0.014	0.00024	0.0025		mg/L	5	5/21/2015 4:39:52 PM	19333
Selenium	0.019	0.00097	0.0050		mg/L	5	5/21/2015 4:39:52 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/29/2015 3:42:35 PM	19431
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Acenaphthylene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Aniline	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Anthracene	ND	1.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Azobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
:o(k)fluoranthene	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzoic acid	ND	1.0	20		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzyl alcohol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Carbazole	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Chloroaniline	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Chlorophenol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Chrysene	ND	2.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Dibenzofuran	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505708-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-15-GW
Collection Date: 5/14/2015 4:00:00 PM
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Diethyl phthalate	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Fluoranthene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Fluorene	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachloroethane	ND	1.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
horone	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Methylphenol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Naphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Nitroaniline	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
3-Nitroaniline	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Nitroaniline	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Nitrobenzene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Nitrophenol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Nitrophenol	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Pentachlorophenol	ND	1.1	20		µg/L	1	5/19/2015 7:27:38 PM	19289
Phenanthrene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Phenol	ND	1.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Pyrene	ND	2.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Pyridine	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505708-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-15-GW
Collection Date: 5/14/2015 4:00:00 PM
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Surr: 2-Fluorophenol	59.1	0	14.9-111		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: Phenol-d5	70.7	0	11.3-108		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: 2,4,6-Tribromophenol	72.4	0	15.7-154		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: Nitrobenzene-d5	105	0	47.8-106		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: 2-Fluorobiphenyl	102	0	21.3-123		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: 4-Terphenyl-d14	102	0	14.3-135		%REC	1	5/19/2015 7:27:38 PM	19289
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.51	0.13	2.0	J	µg/L	2	5/20/2015 7:39:53 PM	R26322
Toluene	ND	0.22	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Ethylbenzene	ND	0.20	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Methyl tert-butyl ether (MTBE)	150	0.35	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,4-Trimethylbenzene	ND	0.32	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,3,5-Trimethylbenzene	ND	0.25	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
[illegible]hthalene	ND	0.44	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
[illegible]ethylnaphthalene	ND	1.1	8.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Methylnaphthalene	ND	1.2	8.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Acetone	9.7	1.9	20	J	µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Butanone	2.9	0.73	20	J	µg/L	2	5/20/2015 7:39:53 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 7:39:53 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505708-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-15-GW
Collection Date: 5/14/2015 4:00:00 PM
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1-Dichloroethane	ND	0.80	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 7:39:53 PM	R26322
Isopropylbenzene	ND	0.30	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
4-Isopropyltoluene	ND	0.38	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 7:39:53 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
n-Butylbenzene	ND	0.49	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
n-Propylbenzene	ND	0.33	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Butylbenzene	ND	0.46	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Styrene	ND	0.21	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Xylenes, Total	ND	0.56	3.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
Surr: 4-Bromofluorobenzene	91.4	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
Surr: Dibromofluoromethane	115	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
Surr: Toluene-d8	102	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505708-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-15-GW
Collection Date: 5/14/2015 4:00:00 PM
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	0.78	0.080	0.10		mg/L	2	5/20/2015 7:39:53 PM	R26322
Surr: BFB	97.8	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505708-002
Matrix: TRIP BLANK
Client Sample ID: TRIP BLANK
Collection Date:
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
on disulfide	ND	0.67	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505708-002
Matrix: TRIP BLANK
Client Sample ID: TRIP BLANK
Collection Date:
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 8:08:38 PM	R26322
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
Surr: Dibromofluoromethane	106	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
Surr: Toluene-d8	97.7	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 8:08:38 PM	R26322
Surr: BFB	99.0	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765932-01

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505708-001H SWMU 10-15-GW

Project # :

Collected By :
Collection Date : 05/14/15 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.055	0.0050	mg/l	9012B	05/28/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 06/02/15 11:33 Printed: 06/02/15 11:33

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765932-02

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505708-001I SWMU 10-15-GW

Project # :

Collected By :
Collection Date : 05/14/15 16:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	7199	05/26/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 06/02/15 11:33 Printed: 06/02/15 11:33
L765932-02 (CR6ICFFP) - pH=7.69

ESC
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YOUR LAB OF CHOICE

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

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Quality Assurance Report
Level II

L765932

June 02, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
.xavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765932-02
WG791484: R3039673: L765932-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals
Client ID:	PBW	Batch ID:	19333	RunNo:	26358
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	783226
				Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-19333	SampType:	LCS	TestCode:	EPA Method 200.7: Metals
Client ID:	LCSW	Batch ID:	19333	RunNo:	26358
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	783227
				Units:	mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
B	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
C	0.50	0.0060	0.5000	0	99.5	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26291**	RunNo: **26291**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **780950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Manganese	ND	0.0020								
Silver	0.0014	0.0050								J

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26291**	RunNo: **26291**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **780951** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781115** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB-19333** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **19333** RunNo: **26348**
Prep Date: **5/20/2015** Analysis Date: **5/21/2015** SeqNo: **782930** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LLLCS-19333** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **19333** RunNo: **26348**
Prep Date: **5/20/2015** Analysis Date: **5/21/2015** SeqNo: **782932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.023	0.0010	0.02500	0	92.4	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.022	0.0010	0.02500	0	88.9	85	115			

Sample ID **1505708-001FLLMS** SampType: **MS** TestCode: **EPA 200.8: Metals**
Client ID: **SWMU 10-15-GW** Batch ID: **19333** RunNo: **26348**
Prep Date: **5/20/2015** Analysis Date: **5/21/2015** SeqNo: **782992** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.033	0.0050	0.02500	0.01167	86.1	70	130			
Lead	0.028	0.0025	0.01250	0.01383	114	70	130			
Selenium	0.041	0.0050	0.02500	0.01931	86.7	70	130			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26392** RunNo: **26392**
Prep Date: Analysis Date: **5/22/2015** SeqNo: **784378** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26392** RunNo: **26392**
Prep Date: Analysis Date: **5/22/2015** SeqNo: **784379** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26392** RunNo: **26392**
Prep Date: Analysis Date: **5/22/2015** SeqNo: **784380** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26392** RunNo: **26392**
Prep Date: Analysis Date: **5/22/2015** SeqNo: **784381** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **1505708-001FLLMS** SampType: **MSLL** TestCode: **EPA 200.8: Metals**
Client ID: **SWMU 10-15-GW** Batch ID: **19333** RunNo: **26412**
Prep Date: **5/20/2015** Analysis Date: **5/26/2015** SeqNo: **784803** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.011	0.0050	0.02500	0	43.5	70	130			S

Sample ID **LLLCS-19333** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **19333** RunNo: **26606**
Prep Date: **5/20/2015** Analysis Date: **6/3/2015** SeqNo: **792066** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	114	85	115			

Sample ID **MB-19333** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **19333** RunNo: **26606**
Prep Date: **5/20/2015** Analysis Date: **6/3/2015** SeqNo: **792073** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**

Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**

Prep Date: Analysis Date: **5/19/2015** SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**

Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**

Prep Date: Analysis Date: **5/19/2015** SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**

Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**

Prep Date: Analysis Date: **5/19/2015** SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**

Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**

Prep Date: Analysis Date: **5/19/2015** SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**

Client ID: **PBW** Batch ID: **R26392** RunNo: **26392**

Prep Date: Analysis Date: **5/22/2015** SeqNo: **784403** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26392**	RunNo: **26392**
Prep Date:	Analysis Date: **5/22/2015**	SeqNo: **784404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26392**	RunNo: **26392**
Prep Date:	Analysis Date: **5/22/2015**	SeqNo: **784408** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26392**	RunNo: **26392**
Prep Date:	Analysis Date: **5/22/2015**	SeqNo: **784409** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19431**	SampType:	**MBLK**		TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**PBW**	Batch ID:	**19431**		RunNo:	**26501**				
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**		SeqNo:	**787555**	Units:	**mg/L**		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.00020								

Sample ID	**LCS-19431**	SampType:	**LCS**		TestCode:	**EPA Method 245.1: Mercury**				
Client ID:	**LCSW**	Batch ID:	**19431**		RunNo:	**26501**				
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**		SeqNo:	**787556**	Units:	**mg/L**		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.0050	0.00020	0.005000	0	100	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.500								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10.2	0.500	10.00	0	102	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26328**	RunNo: **26328**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782445** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26328**	RunNo: **26328**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782446** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.3	90	110			
Chloride	4.7	0.50	5.000	0	94.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**		
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**		
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**		
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**		
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**	
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-[illegible]none	ND	10								
C[illegible] disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
tr[illegible] 3-Dichloropropene	ND	1.0								
1,[illegible]richlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Samp'

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Chloro Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**	
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-[illegible]ophenyl phenyl ether	ND	10								
B[illegible]enzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix	B	Analyte detected in the associated Method Blank
		E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

WO#: **1505708**

Hall Environmental Analysis Laboratory, Inc.

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**	
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-[illegible]sodiphenylamine	ND	10								
N[illegible]alene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.8	14.9	111			
Surr: Phenol-d5	160		200.0		80.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		80.2	15.7	154			
Surr: Nitrobenzene-d5	76		100.0		76.1	47.8	106			
Surr: 2-Fluorobiphenyl	78		100.0		78.4	21.3	123			
Surr: 4-Terphenyl-d14	110		100.0		105	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19289**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781334** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.9	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	79.9	58.1	103			
2-Chlorophenol	140	10	200.0	0	70.4	49.5	96.8			
1,4-Dichlorobenzene	73	10	100.0	0	72.6	40.4	89.4			
2,4-Dinitrotoluene	70	10	100.0	0	69.6	38.6	91.3			
N-Nitrosodi-n-propylamine	80	10	100.0	0	80.1	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	71.9	26.4	108			
Pentachlorophenol	120	20	200.0	0	61.8	36.5	86.6			
Phenol	160	10	200.0	0	77.8	29.3	108			
Pyrene	74	10	100.0	0	73.9	45.7	100			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	39.3	94.5			
Surr: 2-Fluorophenol	150		200.0		74.2	14.9	111			
Surr: Phenol-d5	170		200.0		83.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		86.1	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		81.8	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	21.3	123			
[illegible] 4-Terphenyl-d14	79		100.0		78.7	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505708**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782177** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782181** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505708 RcptNo: 1

Received by/date: AG 05/15/15

Logged By: Ashley Gallegos 5/15/2015 10:03:00 AM AG

Completed By: Ashley Gallegos 5/15/2015 10:16:08 AM AG

Reviewed By: AG/AG 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
    # of preserved bottles checked for pH: 2 1 (<2 or >12 unless noted)
    Adjusted? NO
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)
    Checked by: AG

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
Email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505708	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1) DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL/DISSOLV)	GEN CHEM	CR6		Air Bubbles (Y or N)
5-14-15	1600	WATER	SWMU 10-15-GW	40 mL VOA-6	HCL	-001			✓							✓						
	↓	↓	↓	1 L AMBER-2	—												✓		✓			
				250 mL AMBER-1	—					✓												
				100 mL PLASTIC-1	HNO_3													✓				
				500 mL PLASTIC-1	HNO_3													✓				
				500 mL PLASTIC-1	NaOH								✓									
				50 mL PLASTIC-1	NH_4SO_4															✓		
	—	WATER	TRIP BLANK	40 mL VOA-4	HCL	-002										✓						

Date	Time	Relinquished by	Received by	Date	Time
5-15-15	1003	[signature]	[signature]	05/15/15	1003
Date	Time	Relinquished by	Received by	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505709

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 26, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1505709**
Date Reported: **11/4/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505709-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 DUP01GW
Collection Date: 5/14/2015
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	1.1	0.91	1.0		mg/L	1	5/15/2015 9:31:35 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 9:31:35 PM	19246
Surr: DNOP	125	0	76.5-150		%REC	1	5/15/2015 9:31:35 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	0.55	0.15	0.50		mg/L	5	5/21/2015 12:44:04 AM	R26328
Chloride	2400	27	100		mg/L	200	5/21/2015 12:56:28 AM	R26328
Sulfate	470	2.3	10		mg/L	20	5/15/2015 6:01:26 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: **JLF**	
Barium	0.22	0.00095	0.0020		mg/L	1	5/15/2015 5:37:44 PM	R26242
Beryllium	0.00033	0.00031	0.0020	J	mg/L	1	5/15/2015 5:37:44 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/19/2015 5:06:41 PM	R26291
Chromium	0.0094	0.0018	0.0060		mg/L	1	5/15/2015 5:37:44 PM	R26242
Cobalt	0.023	0.0013	0.0060		mg/L	1	5/15/2015 5:37:44 PM	R26242
Iron	2.2	0.036	0.10	*	mg/L	5	5/19/2015 5:10:46 PM	R26291
Manganese	2.5	0.0013	0.010	*	mg/L	5	5/19/2015 5:10:46 PM	R26291
Nickel	0.66	0.0021	0.010	*	mg/L	1	5/15/2015 5:37:44 PM	R26242
[illegible]r	ND	0.0012	0.0050		mg/L	1	5/19/2015 5:06:41 PM	R26291
Vanadium	0.0076	0.0015	0.050	J	mg/L	1	5/15/2015 5:37:44 PM	R26242
Zinc	0.036	0.0028	0.010		mg/L	1	5/15/2015 5:37:44 PM	R26242
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Barium	0.31	0.00095	0.0020		mg/L	1	5/21/2015 4:32:36 PM	19333
Beryllium	0.0014	0.00031	0.0020	J	mg/L	1	5/21/2015 4:32:36 PM	19333
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 4:32:36 PM	19333
Chromium	0.0059	0.0022	0.0060	J	mg/L	1	5/21/2015 4:32:36 PM	19333
Cobalt	0.025	0.0013	0.0060		mg/L	1	5/21/2015 4:32:36 PM	19333
Iron	7.4	0.15	0.40	*	mg/L	20	6/11/2015 10:56:49 AM	19333
Manganese	3.0	0.0076	0.010	*	mg/L	5	5/21/2015 4:34:26 PM	19333
Nickel	0.65	0.0023	0.010	*	mg/L	1	5/21/2015 4:32:36 PM	19333
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 4:32:36 PM	19333
Vanadium	0.017	0.0015	0.050	J	mg/L	1	5/21/2015 4:32:36 PM	19333
Zinc	0.034	0.0036	0.010		mg/L	1	5/21/2015 4:32:36 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: **DBD**	
Antimony	ND	0.0014	0.010		mg/L	10	5/19/2015 4:47:49 PM	R26294
Arsenic	0.011	0.0013	0.020	J*	mg/L	20	5/22/2015 6:18:37 PM	R26392
Lead	0.0039	0.00026	0.010	J	mg/L	10	5/19/2015 4:47:49 PM	R26294
Selenium	0.023	0.0019	0.010		mg/L	10	5/19/2015 4:47:49 PM	R26294
EPA 200.8: METALS							Analyst: **TES**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: SWMU 10 DUP01GW
Project: SWMU 10
Collection Date: 5/14/2015
Lab ID: 1505709-001
Matrix: AQUEOUS
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: **TES**	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 5:06:47 PM	19333
Arsenic	0.012	0.0015	0.0050	*	mg/L	5	5/21/2015 4:50:46 PM	19333
Lead	0.012	0.00094	0.010		mg/L	20	5/21/2015 4:53:29 PM	19333
Selenium	0.022	0.00097	0.0050		mg/L	5	5/21/2015 4:50:46 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: **MED**	
Mercury	ND	0.000059	0.00020		mg/L	1	5/29/2015 3:44:33 PM	19431
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Acenaphthylene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Aniline	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Anthracene	ND	1.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Azobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
[illegible]o(k)fluoranthene	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
[illegible]nzoic acid	ND	1.0	20		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzyl alcohol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Carbazole	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Chloroaniline	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Chlorophenol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Chrysene	ND	2.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Dibenzofuran	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505709-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 DUP01GW
Collection Date: 5/14/2015
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Diethyl phthalate	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Fluoranthene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Fluorene	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachloroethane	ND	1.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
[illegible]horone	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
[illegible]methylnaphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Methylphenol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Naphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Nitroaniline	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
3-Nitroaniline	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Nitroaniline	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Nitrobenzene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Nitrophenol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Nitrophenol	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Pentachlorophenol	ND	1.1	20		µg/L	1	5/19/2015 7:55:52 PM	19289
Phenanthrene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Phenol	ND	1.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Pyrene	ND	2.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Pyridine	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505709-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 DUP01GW
Collection Date: 5/14/2015
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Surr: 2-Fluorophenol	18.1	0	14.9-111		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: Phenol-d5	27.8	0	11.3-108		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: 2,4,6-Tribromophenol	31.3	0	15.7-154		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: Nitrobenzene-d5	110	0	47.8-106	S	%REC	1	5/19/2015 7:55:52 PM	19289
Surr: 2-Fluorobiphenyl	112	0	21.3-123		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: 4-Terphenyl-d14	96.8	0	14.3-135		%REC	1	5/19/2015 7:55:52 PM	19289
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.40	0.065	1.0	J	µg/L	1	5/20/2015 8:37:19 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Methyl tert-butyl ether (MTBE)	150	0.17	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Acetone	16	0.94	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Butanone	2.9	0.36	10	J	µg/L	1	5/20/2015 8:37:19 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505709-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 DUP01GW
Collection Date: 5/14/2015
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 8:37:19 PM	R26322
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322
Surr: 4-Bromofluorobenzene	88.0	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322
Surr: Dibromofluoromethane	136	0	70-130	S	%REC	1	5/20/2015 8:37:19 PM	R26322
Surr: Toluene-d8	92.4	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505709-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10 DUP01GW
Collection Date: 5/14/2015
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	0.73	0.040	0.050		mg/L	1	5/20/2015 8:37:19 PM	R26322
Surr: BFB	97.7	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505709-002
Matrix: TRIP BLANK
Client Sample ID: TRIP BLANK
Collection Date:
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
on disulfide	ND	0.67	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505709-002
Matrix: TRIP BLANK
Client Sample ID: TRIP BLANK
Collection Date:
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 9:05:59 PM	R26322
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
Surr: Dibromofluoromethane	97.9	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
Surr: Toluene-d8	96.4	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 9:05:59 PM	R26322
Surr: BFB	99.8	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

ESC
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Fax (615) 758-5859

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Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765930-01

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505709-001H SWMU 10 DUP01GW

Project # :

Collected By :
Collection Date : 05/14/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.051	0.0050	mg/l	9012B	05/28/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
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Reported: Printed: 06/02/15 11:32

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L765930-02

Date Received : May 19, 2015
Description :

Site ID :

Sample ID : 1505709-001I SWMU 10 DUP01GW

Project # :

Collected By :
Collection Date : 05/14/15 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	0.00061	0.00050	mg/l	7199	05/26/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: Printed: 06/02/15 11:32

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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765930

June 02, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
cavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765930-02
WG791484: R3039673: L765930-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19333**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**PBW**	Batch ID:	**19333**	RunNo:	**26358**
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783226** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	**LCS-19333**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**
Client ID:	**LCSW**	Batch ID:	**19333**	RunNo:	**26358**
Prep Date:	**5/20/2015**	Analysis Date:	**5/21/2015**	SeqNo:	**783227** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26242**	RunNo: **26242**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779017** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
N	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26291**	RunNo: **26291**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **780950** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	0.0014	0.0050								J

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26291**	RunNo: **26291**
Prep Date:	Analysis Date: **5/19/2015**	SeqNo: **780951** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals
Client ID:	LCSW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781112 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals
Client ID:	LCSW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781113 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781115 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	R26294	RunNo:	26294
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781116 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals
Client ID:	PBW	Batch ID:	19333	RunNo:	26348
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	782930 Units: mg/L

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LLLCS-19333** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **19333** RunNo: **26348**
Prep Date: **5/20/2015** Analysis Date: **5/21/2015** SeqNo: **782932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.023	0.0010	0.02500	0	92.4	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.022	0.0010	0.02500	0	88.9	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26392** RunNo: **26392**
Prep Date: Analysis Date: **5/22/2015** SeqNo: **784378** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Metals**
Client ID: **LCSW** Batch ID: **R26392** RunNo: **26392**
Prep Date: Analysis Date: **5/22/2015** SeqNo: **784379** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26392** RunNo: **26392**
Prep Date: Analysis Date: **5/22/2015** SeqNo: **784380** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Metals**
Client ID: **PBW** Batch ID: **R26392** RunNo: **26392**
Prep Date: Analysis Date: **5/22/2015** SeqNo: **784381** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID **LLLCS-19333** SampType: **LCSLL** TestCode: **EPA 200.8: Metals**
Client ID: **BatchQC** Batch ID: **19333** RunNo: **26606**
Prep Date: **5/20/2015** Analysis Date: **6/3/2015** SeqNo: **792066** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	114	85	115			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19333**	SampType:	**MBLK**		TestCode:	**EPA 200.8: Metals**					
Client ID:	**PBW**	Batch ID:	**19333**		RunNo:	**26606**					
Prep Date:	**5/20/2015**	Analysis Date:	**6/3/2015**		SeqNo:	**792073**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony		ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781144** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID **LCS** SampType: **LCS** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781145** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781146** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26294** RunNo: **26294**
Prep Date: Analysis Date: **5/19/2015** SeqNo: **781147** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID **MB** SampType: **MBLK** TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW** Batch ID: **R26392** RunNo: **26392**
Prep Date: Analysis Date: **5/22/2015** SeqNo: **784403** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26392**	RunNo: **26392**
Prep Date:	Analysis Date: **5/22/2015**	SeqNo: **784404** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **R26392**	RunNo: **26392**
Prep Date:	Analysis Date: **5/22/2015**	SeqNo: **784408** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **R26392**	RunNo: **26392**
Prep Date:	Analysis Date: **5/22/2015**	SeqNo: **784409** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	**MB-19431**	SampType:	**MBLK**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**PBW**	Batch ID:	**19431**	RunNo:	**26501**
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787555** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	**LCS-19431**	SampType:	**LCS**	TestCode:	**EPA Method 245.1: Mercury**
Client ID:	**LCSW**	Batch ID:	**19431**	RunNo:	**26501**
Prep Date:	**5/28/2015**	Analysis Date:	**5/29/2015**	SeqNo:	**787556** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779359** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.500								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26247**	RunNo: **26247**
Prep Date:	Analysis Date: **5/15/2015**	SeqNo: **779360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10.2	0.500	10.00	0	102	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R26328**	RunNo: **26328**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782445** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R26328**	RunNo: **26328**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782446** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.3	90	110			
Chloride	4.7	0.50	5.000	0	94.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**	
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
tra[illegible] 1 3-Dichloropropene	ND	1.0								
1, [illegible]chlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**			TestCode: **EPA Method 8260B: VOLATILES**						
Client ID: **LCSW**	Batch ID: **R26322**			RunNo: **26322**						
Prep Date:	Analysis Date: **5/20/2015**			SeqNo: **782103**		Units: **µg/L**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**	
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butylbenzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**	
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
N[illegible]ilene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.8	14.9	111			
Surr: Phenol-d5	160		200.0		80.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		80.2	15.7	154			
Surr: Nitrobenzene-d5	76		100.0		76.1	47.8	106			
Surr: 2-Fluorobiphenyl	78		100.0		78.4	21.3	123			
Surr: 4-Terphenyl-d14	110		100.0		105	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **lcs-19289** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW** Batch ID: **19289** RunNo: **26300**
Prep Date: **5/19/2015** Analysis Date: **5/19/2015** SeqNo: **781334** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.9	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	79.9	58.1	103			
2-Chlorophenol	140	10	200.0	0	70.4	49.5	96.8			
1,4-Dichlorobenzene	73	10	100.0	0	72.6	40.4	89.4			
2,4-Dinitrotoluene	70	10	100.0	0	69.6	38.6	91.3			
N-Nitrosodi-n-propylamine	80	10	100.0	0	80.1	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	71.9	26.4	108			
Pentachlorophenol	120	20	200.0	0	61.8	36.5	86.6			
Phenol	160	10	200.0	0	77.8	29.3	108			
Pyrene	74	10	100.0	0	73.9	45.7	100			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	39.3	94.5			
Surr: 2-Fluorophenol	150		200.0		74.2	14.9	111			
Surr: Phenol-d5	170		200.0		83.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		86.1	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		81.8	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	21.3	123			
Surr: 4-Terphenyl-d14	79		100.0		78.7	14.3	135			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505709**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782177** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782181** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505709 RcptNo: 1

Received by/date: 05/15/15

Logged By: Ashley Gallegos 5/15/2015 10:03:00 AM

Completed By: Ashley Gallegos 5/15/2015 10:35:37 AM

Reviewed By: 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐ # of preserved bottles checked for pH: (<2 or >12 unless noted)
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐ Checked by:
    (If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name:
Project #: SWMU 10
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR 6	Air Bubbles (Y or N)
5.14.15	—	WATER	SWMU 10 ~~[illegible]~~	40 ML VOA-6	HCL	1505709 -001			✓							✓					
			DUP01GW	1L AMBER-2	—												✓		✓		
				250 ML AMBER-1	—					✓											
				100 ML PLASTIC-1	HNO_3													✓			
				500 ML PLASTIC-1	HNO_3													✓			
				500 ML PLASTIC-1	NaOH								✓								
				50 ML PLASTIC-1	NH_4,$2SO_4$															✓	
5.14.15	—	WATER	TRIP BLANK	40 ML VOA-4	HCL	-002										✓					

Date:	Time:	Relinquished by:	Received by:	Date	Time
5.15.15	1003	[signature]	[signature]	05/15/15	1003
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 04, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 OrderNo.: 1505710

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 01, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505710-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-16-GW
Collection Date: 5/14/2015 2:30:00 PM
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/15/2015 9:58:19 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 9:58:19 PM	19246
Surr: DNOP	137	0	76.5-150		%REC	1	5/15/2015 9:58:19 PM	19246
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Acenaphthylene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Aniline	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Anthracene	ND	1.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Azobenzene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzoic acid	7.1	1.0	20	J	µg/L	1	5/19/2015 8:23:56 PM	19289
Benzyl alcohol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Carbazole	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Chloroaniline	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Chlorophenol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Chrysene	ND	2.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Dibenzofuran	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Diethyl phthalate	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505710-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-16-GW
Collection Date: 5/14/2015 2:30:00 PM
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Fluoranthene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Fluorene	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachloroethane	ND	1.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Isophorone	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Methylphenol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
-Methylphenol	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
. .ıitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Naphthalene	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Nitroaniline	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
3-Nitroaniline	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Nitroaniline	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Nitrobenzene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Nitrophenol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Nitrophenol	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Pentachlorophenol	ND	1.1	20		µg/L	1	5/19/2015 8:23:56 PM	19289
Phenanthrene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Phenol	ND	1.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Pyrene	ND	2.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Pyridine	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Surr: 2-Fluorophenol	84.1	0	14.9-111		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: Phenol-d5	74.9	0	11.3-108		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: 2,4,6-Tribromophenol	127	0	15.7-154		%REC	1	5/19/2015 8:23:56 PM	19289

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505710-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-16-GW
Collection Date: 5/14/2015 2:30:00 PM
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Surr: Nitrobenzene-d5	101	0	47.8-106		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: 2-Fluorobiphenyl	118	0	21.3-123		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: 4-Terphenyl-d14	129	0	14.3-135		%REC	1	5/19/2015 8:23:56 PM	19289
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
Benzene	0.24	0.065	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Methyl tert-butyl ether (MTBE)	19	0.17	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,4-Trimethylbenzene	0.18	0.16	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dichloroethane (EDC)	0.47	0.18	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Acetone	1.6	0.94	10	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
nodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
cis-1,2-DCE	0.39	0.081	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1-Dichloroethane	3.1	0.40	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10
Lab ID: 1505710-001 **Matrix:** AQUEOUS

Client Sample ID: SWMU 10-16-GW
Collection Date: 5/14/2015 2:30:00 PM
Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **cadg**	
1,1-Dichloroethene	0.73	0.099	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
rachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Trichloroethene (TCE)	0.77	0.16	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Vinyl chloride	0.47	0.13	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Xylenes, Total	0.35	0.28	1.5	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
Surr: Dibromofluoromethane	91.6	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
Surr: Toluene-d8	98.5	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **cadg**	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 9:34:45 PM	R26322
Surr: BFB	96.2	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **MB-19246**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range**		
Client ID: **PBW**	Batch ID: **19246**	RunNo: **26216**		
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778433**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.4		1.000		137	76.5	150			

Sample ID **LCS-19246**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range**		
Client ID: **LCSW**	Batch ID: **19246**	RunNo: **26216**		
Prep Date: **5/15/2015**	Analysis Date: **5/15/2015**	SeqNo: **778434**	Units: **mg/L**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**	
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782101**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
C disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **5mL rb** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **R26322** RunNo: **26322**
Prep Date: Analysis Date: **5/20/2015** SeqNo: **782101** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1 ichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **R26322** RunNo: **26322**
Prep Date: Analysis Date: **5/20/2015** SeqNo: **782103** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**	
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**	
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782103**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**	
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butylbenzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company
Project: SWMU 10

Sample ID **mb-19289**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBW**	Batch ID: **19289**	RunNo: **26300**	
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781333**	Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
N[illegible]alene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.8	14.9	111			
Surr: Phenol-d5	160		200.0		80.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		80.2	15.7	154			
Surr: Nitrobenzene-d5	76		100.0		76.1	47.8	106			
Surr: 2-Fluorobiphenyl	78		100.0		78.4	21.3	123			
Surr: 4-Terphenyl-d14	110		100.0		105	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **lcs-19289**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **19289**	RunNo: **26300**
Prep Date: **5/19/2015**	Analysis Date: **5/19/2015**	SeqNo: **781334** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.9	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	79.9	58.1	103			
2-Chlorophenol	140	10	200.0	0	70.4	49.5	96.8			
1,4-Dichlorobenzene	73	10	100.0	0	72.6	40.4	89.4			
2,4-Dinitrotoluene	70	10	100.0	0	69.6	38.6	91.3			
N-Nitrosodi-n-propylamine	80	10	100.0	0	80.1	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	71.9	26.4	108			
Pentachlorophenol	120	20	200.0	0	61.8	36.5	86.6			
Phenol	160	10	200.0	0	77.8	29.3	108			
Pyrene	74	10	100.0	0	73.9	45.7	100			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	39.3	94.5			
Surr: 2-Fluorophenol	150		200.0		74.2	14.9	111			
Surr: Phenol-d5	170		200.0		83.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		86.1	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		81.8	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	21.3	123			
Surr: 4-Terphenyl-d14	79		100.0		78.7	14.3	135			

Qualifiers:

- * Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505710**

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782177** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		102	70	130			

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R26322**	RunNo: **26322**
Prep Date:	Analysis Date: **5/20/2015**	SeqNo: **782181** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505710 RcptNo: 1

Received by/date: 05/15/15

Logged By: Ashley Gallegos 5/15/2015 10:03:00 AM

Completed By: Ashley Gallegos 5/15/2015 10:37:57 AM

Reviewed By: 05/15/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐ # of preserved bottles checked for pH: (<2 or >12 unless noted)
    (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐ Checked by:
    (If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0231
email or Fax#: CHERYL.JOHNSON@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: SWMU 10
Project #:
Project Manager: CHERYL JOHNSON
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505410	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (~~Gas/Diesel~~) GRO/DRO/MRO	~~TPH (Method 418.1)~~ DIESEL	EDB (Method 504.1)	8310 (PNA or PAH)	~~RCRA 8 Metals~~ CYANIDE	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	METALS (TOTAL & DISSOLVED)	GEN CHEM	CR6		Air Bubbles (Y or N)
5/14/15	14:30	WATER	SWMU 10-16-GW	40 ML VOA-6	HCL	-001			✓	✓						✓						
	↓	↓	↓	1 L AMBER-2	—												✓	✓				

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
5.15.15	1003	[signature]	[signature]	05/15/15	1003	
Date:	Time:	Relinquished by:	Received by:	Date	Time	

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES

TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 01, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10 Drill Cuttings OrderNo.: 1505A00

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/22/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1505A00**
Date Reported: **6/1/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10 Drill Cuttings
Lab ID: 1505A00-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-Drill Cutting
Collection Date: 5/20/2015 1:05:00 PM
Received Date: 5/22/2015 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**LGT**
Fluoride	17	6.0		mg/Kg	20	5/27/2015 3:51:05 PM	19403
Chloride	1200	75		mg/Kg	50	5/29/2015 4:30:06 AM	19403
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	6/1/2015 11:08:21 AM	19484
Bromide	ND	1.5		mg/Kg	5	6/1/2015 11:08:21 AM	19484
Nitrogen, Nitrate (As N)	13	6.0		mg/Kg	20	5/27/2015 3:51:05 PM	19403
Phosphorus, Orthophosphate (As P)	ND	7.5		mg/Kg	5	6/1/2015 11:08:21 AM	19484
Sulfate	420	30		mg/Kg	20	5/27/2015 3:51:05 PM	19403
MERCURY, TCLP						Analyst:	**MED**
Mercury	ND	0.020		mg/L	1	5/28/2015 3:04:31 PM	19433
EPA METHOD 6010B: SOIL METALS						Analyst:	**ELS**
Calcium	28000	250		mg/Kg	10	5/28/2015 12:27:25 PM	19423
Magnesium	5600	51		mg/Kg	2	5/28/2015 12:11:39 PM	19423
Potassium	2300	100		mg/Kg	2	5/28/2015 12:11:39 PM	19423
Sodium	1800	51		mg/Kg	2	5/28/2015 12:11:39 PM	19423
EPA METHOD 6010B: TCLP METALS						Analyst:	**ELS**
Arsenic	ND	5.0		mg/L	1	5/28/2015 12:54:32 PM	19417
Barium	ND	100		mg/L	1	5/28/2015 12:54:32 PM	19417
Cadmium	ND	1.0		mg/L	1	5/28/2015 12:54:32 PM	19417
Chromium	ND	5.0		mg/L	1	5/28/2015 12:54:32 PM	19417
Lead	ND	5.0		mg/L	1	5/28/2015 12:54:32 PM	19417
Selenium	ND	1.0		mg/L	1	5/28/2015 12:54:32 PM	19417
Silver	ND	5.0		mg/L	1	5/28/2015 12:54:32 PM	19417
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst:	**KJH**
Diesel Range Organics (DRO)	3600	100		mg/Kg	10	5/27/2015 9:57:59 AM	19340
Motor Oil Range Organics (MRO)	740	500		mg/Kg	10	5/27/2015 9:57:59 AM	19340
Surr: DNOP	0	57.9-140	S	%REC	10	5/27/2015 9:57:59 AM	19340
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	160	25		mg/Kg	5	5/27/2015 5:37:56 PM	19360
Surr: BFB	221	75.4-113	S	%REC	5	5/27/2015 5:37:56 PM	19360
EPA METHOD 8270C TCLP						Analyst:	**DAM**
2-Methylphenol	ND	200		mg/L	1	5/29/2015 12:52:10 PM	19424
3+4-Methylphenol	ND	200		mg/L	1	5/29/2015 12:52:10 PM	19424
Phenol	ND	200		mg/L	1	5/29/2015 12:52:10 PM	19424
2,4-Dinitrotoluene	ND	0.13		mg/L	1	5/29/2015 12:52:10 PM	19424
Hexachlorobenzene	ND	0.13		mg/L	1	5/29/2015 12:52:10 PM	19424
Hexachlorobutadiene	ND	0.50		mg/L	1	5/29/2015 12:52:10 PM	19424

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: SWMU 10 Drill Cuttings
Lab ID: 1505A00-001 **Matrix:** SOIL

Client Sample ID: SWMU 10-Drill Cutting
Collection Date: 5/20/2015 1:05:00 PM
Received Date: 5/22/2015 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C TCLP						Analyst: **DAM**	
Hexachloroethane	ND	3.0		mg/L	1	5/29/2015 12:52:10 PM	19424
Nitrobenzene	ND	2.0		mg/L	1	5/29/2015 12:52:10 PM	19424
Pentachlorophenol	ND	100		mg/L	1	5/29/2015 12:52:10 PM	19424
Pyridine	ND	5.0		mg/L	1	5/29/2015 12:52:10 PM	19424
2,4,5-Trichlorophenol	ND	400		mg/L	1	5/29/2015 12:52:10 PM	19424
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	5/29/2015 12:52:10 PM	19424
Cresols, Total	ND	200		mg/L	1	5/29/2015 12:52:10 PM	19424
Surr: 2-Fluorophenol	80.5	20.9-115		%REC	1	5/29/2015 12:52:10 PM	19424
Surr: Phenol-d5	80.4	13.6-102		%REC	1	5/29/2015 12:52:10 PM	19424
Surr: 2,4,6-Tribromophenol	119	11.3-133		%REC	1	5/29/2015 12:52:10 PM	19424
Surr: Nitrobenzene-d5	111	49.4-119		%REC	1	5/29/2015 12:52:10 PM	19424
Surr: 2-Fluorobiphenyl	116	48.2-114	S	%REC	1	5/29/2015 12:52:10 PM	19424
Surr: 4-Terphenyl-d14	93.9	35.5-125		%REC	1	5/29/2015 12:52:10 PM	19424
VOLATILES BY 8260B/1311						Analyst: **DJF**	
Benzene	ND	0.50		mg/L	1	5/27/2015 1:24:20 PM	19393
2-Butanone	ND	200		mg/L	1	5/27/2015 1:24:20 PM	19393
Carbon Tetrachloride	ND	0.50		mg/L	1	5/27/2015 1:24:20 PM	19393
Chlorobenzene	ND	100		mg/L	1	5/27/2015 1:24:20 PM	19393
Chloroform	ND	6.0		mg/L	1	5/27/2015 1:24:20 PM	19393
1,4-Dichlorobenzene	ND	7.5		mg/L	1	5/27/2015 1:24:20 PM	19393
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	5/27/2015 1:24:20 PM	19393
1,1-Dichloroethene	ND	0.70		mg/L	1	5/27/2015 1:24:20 PM	19393
Hexachlorobutadiene	ND	0.50		mg/L	1	5/27/2015 1:24:20 PM	19393
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	5/27/2015 1:24:20 PM	19393
Trichloroethene (TCE)	ND	0.50		mg/L	1	5/27/2015 1:24:20 PM	19393
Vinyl chloride	ND	0.20		mg/L	1	5/27/2015 1:24:20 PM	19393
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	5/27/2015 1:24:20 PM	19393
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	5/27/2015 1:24:20 PM	19393
Surr: Dibromofluoromethane	104	70-130		%REC	1	5/27/2015 1:24:20 PM	19393
Surr: Toluene-d8	109	70-130		%REC	1	5/27/2015 1:24:20 PM	19393

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	150527030
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1505A00
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	150527030-001	**Sampling Date**	5/20/2015	**Date/Time Received**	5/27/2015	12:00 PM
Client Sample ID	1505A00-001B / SWMU 10-DRILL CUTTING	**Sampling Time**	1:05 PM			
Matrix	Soil					
Comments						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	1.51	mg/Kg	1	5/28/2015	ETL	SW846 CH7	
Ignitability	Negative			5/27/2015	JWC	EPA 1030	
pH	8.74	ph Units		5/27/2015	KJS	EPA 9045	
Reactive sulfide	ND	mg/kg	10	5/28/2015	KJS	SW846 CH7	

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 150527030
Project Name: 1505A00

Analytical Results Report
Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Reactive sulfide	0.200	mg/kg	0.2	100.0	80-120	5/28/2015	5/28/2015
Cyanide (reactive)	0.477	mg/kg	0.5	95.4	70-130	5/28/2015	5/28/2015

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
150527029-001	Reactive sulfide	ND	35.0	mg/kg	50	70.0	70-130	5/28/2015	5/28/2015
150527029-001	Cyanide (reactive)	ND	11.7	mg/kg	12.5	93.6	70-130	5/28/2015	5/28/2015

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide (reactive)	12.2	mg/kg	12.5	97.6	4.2	0-25	5/28/2015	5/28/2015

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide (reactive)	ND	mg/Kg	1	5/28/2015	5/28/2015
Reactive sulfide	ND	mg/kg	10	5/28/2015	5/28/2015

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company
Project: SWMU 10 Drill Cuttings

Sample ID **MB-19403** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **19403** RunNo: **26448**
Prep Date: **5/27/2015** Analysis Date: **5/27/2015** SeqNo: **786139** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID **LCS-19403** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **19403** RunNo: **26448**
Prep Date: **5/27/2015** Analysis Date: **5/27/2015** SeqNo: **786140** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.6	0.30	1.500	0	105	90	110			
Chloride	14	1.5	15.00	0	93.1	90	110			
Nitrogen, Nitrate (As N)	7.4	0.30	7.500	0	98.2	90	110			
Sulfate	29	1.5	30.00	0	97.5	90	110			

Sample ID **MB-19484** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **19484** RunNo: **26529**
Prep Date: **6/1/2015** Analysis Date: **6/1/2015** SeqNo: **788531** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.30								
Bromide	ND	0.30								
Phosphorus, Orthophosphate (As P	ND	1.5								

Sample ID **LCS-19484** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **19484** RunNo: **26529**
Prep Date: **6/1/2015** Analysis Date: **6/1/2015** SeqNo: **788532** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	97.7	90	110			
Bromide	7.1	0.30	7.500	0	94.5	90	110			
Phosphorus, Orthophosphate (As P	14	1.5	15.00	0	96.0	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  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 Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company
Project: SWMU 10 Drill Cuttings

Sample ID **MB-19340**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **19340**	RunNo: **26394**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **784383** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.2		10.00		81.8	57.9	140			

Sample ID **LCS-19340**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **19340**	RunNo: **26394**
Prep Date: **5/21/2015**	Analysis Date: **5/26/2015**	SeqNo: **784384** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	80.9	67.8	130			
Surr: DNOP	4.2		5.000		83.2	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company
Project: SWMU 10 Drill Cuttings

Sample ID **MB-19360**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **19360**	RunNo: **26397**
Prep Date: **5/22/2015**	Analysis Date: **5/26/2015**	SeqNo: **784808** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.3	75.4	113			

Sample ID **LCS-19360**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **19360**	RunNo: **26397**
Prep Date: **5/22/2015**	Analysis Date: **5/26/2015**	SeqNo: **784809** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	100	64	130			
Surr: BFB	1000		1000		99.7	75.4	113			

Sample ID **MB-19388**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **19388**	RunNo: **26441**
Prep Date: **5/26/2015**	Analysis Date: **5/27/2015**	SeqNo: **785675** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		89.6	75.4	113			

Sample ID **LCS-19388**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **19388**	RunNo: **26441**
Prep Date: **5/26/2015**	Analysis Date: **5/27/2015**	SeqNo: **785676** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		1000		99.3	75.4	113			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- 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 Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company
Project: SWMU 10 Drill Cuttings

Sample ID **mb-19393** SampType: **MBLK** TestCode: **Volatiles by 8260B/1311**
Client ID: **PBS** Batch ID: **19393** RunNo: **26430**
Prep Date: **5/26/2015** Analysis Date: **5/27/2015** SeqNo: **785934** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
2-Butanone	ND	200								
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	100								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,2-Dichloroethane (EDC)	ND	0.50								
1,1-Dichloroethene	ND	0.70								
Hexachlorobutadiene	ND	0.50								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Surr: 1,2-Dichloroethane-d4	0.19		0.2000		96.2	70	130			
Surr: 4-Bromofluorobenzene	0.21		0.2000		107	70	130			
Surr: Dibromofluoromethane	0.21		0.2000		103	70	130			
Surr: Toluene-d8	0.22		0.2000		108	70	130			

Sample ID **lcs-19393** SampType: **LCS** TestCode: **Volatiles by 8260B/1311**
Client ID: **LCSS** Batch ID: **19393** RunNo: **26430**
Prep Date: **5/26/2015** Analysis Date: **5/27/2015** SeqNo: **785935** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.45	0.30	0.4000	0	111	70	130			
Chlorobenzene	0.45	0.30	0.4000	0	112	70	130			
1,1-Dichloroethene	0.45	0.30	0.4000	0	113	66.4	139			
Trichloroethene (TCE)	0.39	0.30	0.4000	0	97.8	70	130			
Surr: 1,2-Dichloroethane-d4	0.20		0.2000		102	70	130			
Surr: 4-Bromofluorobenzene	0.22		0.2000		111	70	130			
Surr: Dibromofluoromethane	0.21		0.2000		107	70	130			
Surr: Toluene-d8	0.21		0.2000		107	70	130			

Sample ID **1505a00-001ams** SampType: **MS** TestCode: **Volatiles by 8260B/1311**
Client ID: **SWMU 10-Drill Cutti** Batch ID: **19393** RunNo: **26430**
Prep Date: **5/26/2015** Analysis Date: **5/27/2015** SeqNo: **785937** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.43	0.30	0.3994	0	107	70	130			
Chlorobenzene	0.42	0.30	0.3994	0	104	70	130			
1,1-Dichloroethene	0.42	0.30	0.3994	0	106	70	130			
Trichloroethene (TCE)	0.38	0.30	0.3994	0	96.1	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- 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 Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company

Project: SWMU 10 Drill Cuttings

Sample ID **1505a00-001ams** SampType: **MS** TestCode: **Volatiles by 8260B/1311**

Client ID: **SWMU 10-Drill Cutti** Batch ID: **19393** RunNo: **26430**

Prep Date: **5/26/2015** Analysis Date: **5/27/2015** SeqNo: **785937** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.21		0.1997		106	70	130			
Surr: 4-Bromofluorobenzene	0.22		0.1997		108	70	130			
Surr: Dibromofluoromethane	0.21		0.1997		104	70	130			
Surr: Toluene-d8	0.20		0.1997		102	70	130			

Sample ID **1505a00-001amsd** SampType: **MSD** TestCode: **Volatiles by 8260B/1311**

Client ID: **SWMU 10-Drill Cutti** Batch ID: **19393** RunNo: **26430**

Prep Date: **5/26/2015** Analysis Date: **5/27/2015** SeqNo: **785938** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.42	0.30	0.3994	0	106	70	130	0.879	20	
Chlorobenzene	0.43	0.30	0.3994	0	109	70	130	3.95	20	
1,1-Dichloroethene	0.44	0.30	0.3994	0	110	70	130	3.54	20	
Trichloroethene (TCE)	0.38	0.30	0.3994	0	95.3	70	130	0.831	20	
Surr: 1,2-Dichloroethane-d4	0.21		0.1997		103	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.21		0.1997		108	70	130	0	0	
Surr: Dibromofluoromethane	0.21		0.1997		104	70	130	0	0	
Toluene-d8	0.21		0.1997		107	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company
Project: SWMU 10 Drill Cuttings

Sample ID **mb-19424** SampType: **MBLK** TestCode: **EPA Method 8270C TCLP**
Client ID: **PBS** Batch ID: **19424** RunNo: **26486**
Prep Date: **5/28/2015** Analysis Date: **5/29/2015** SeqNo: **788157** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
Phenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.17		0.2000		86.3	20.9	115			
Surr: Phenol-d5	0.19		0.2000		96.6	13.6	102			
Surr: 2,4,6-Tribromophenol	0.19		0.2000		93.2	11.3	133			
Surr: Nitrobenzene-d5	0.097		0.1000		97.2	49.4	119			
2-Fluorobiphenyl	0.086		0.1000		85.5	48.2	114			
Surr: 4-Terphenyl-d14	0.063		0.1000		63.3	35.5	125			

Sample ID **lcs-19424** SampType: **LCS** TestCode: **EPA Method 8270C TCLP**
Client ID: **LCSS** Batch ID: **19424** RunNo: **26486**
Prep Date: **5/28/2015** Analysis Date: **5/29/2015** SeqNo: **788159** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.087	0.010	0.1000	0	87.3	37.2	111			
3+4-Methylphenol	0.18	0.010	0.2000	0	90.8	33.3	150			
2,4-Dinitrotoluene	0.074	0.010	0.1000	0	74.2	30.7	110			
Hexachlorobenzene	0.073	0.010	0.1000	0	72.6	44.1	114			
Hexachlorobutadiene	0.085	0.010	0.1000	0	84.7	41	85.9			
Hexachloroethane	0.080	0.010	0.1000	0	80.0	39.9	101			
Nitrobenzene	0.083	0.010	0.1000	0	82.9	36.4	123			
Pentachlorophenol	0.061	0.010	0.1000	0	61.5	10.6	99.5			
Pyridine	0.074	0.010	0.1000	0	73.8	5.17	104			
2,4,5-Trichlorophenol	0.088	0.010	0.1000	0	87.8	33.8	114			
2,4,6-Trichlorophenol	0.074	0.010	0.1000	0	74.3	26.1	113			
Cresols, Total	0.27	0.010	0.3000	0	89.6	30	136			
Surr: 2-Fluorophenol	0.16		0.2000		80.6	20.9	115			
Surr: Phenol-d5	0.17		0.2000		83.0	13.6	102			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
  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 Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company
Project: SWMU 10 Drill Cuttings

Sample ID **lcs-19424** SampType: **LCS** TestCode: **EPA Method 8270C TCLP**
Client ID: **LCSS** Batch ID: **19424** RunNo: **26486**
Prep Date: **5/28/2015** Analysis Date: **5/29/2015** SeqNo: **788159** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	0.16		0.2000		80.5	11.3	133			
Surr: Nitrobenzene-d5	0.087		0.1000		86.8	49.4	119			
Surr: 2-Fluorobiphenyl	0.080		0.1000		79.9	48.2	114			
Surr: 4-Terphenyl-d14	0.062		0.1000		62.2	35.5	125			

Sample ID **1505a00-001ams** SampType: **MS** TestCode: **EPA Method 8270C TCLP**
Client ID: **SWMU 10-Drill Cutti** Batch ID: **19424** RunNo: **26486**
Prep Date: **5/28/2015** Analysis Date: **5/29/2015** SeqNo: **788164** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.091	0.010	0.1000	0	90.7	43.1	114			
3+4-Methylphenol	0.20	0.010	0.2000	0	99.2	37.8	128			
2,4-Dinitrotoluene	0.086	0.010	0.1000	0	85.8	36.5	125			
Hexachlorobenzene	0.095	0.010	0.1000	0	94.9	41.4	108			
Hexachlorobutadiene	0.086	0.010	0.1000	0	85.9	30.4	101			
Hexachloroethane	0.081	0.010	0.1000	0	80.7	37.3	115			
Nitrobenzene	0.094	0.010	0.1000	0	94.2	40.2	132			
P[illegible]lorophenol	0.030	0.010	0.1000	0	29.7	8.72	103			
Py[illegible]e	0.077	0.010	0.1000	0	76.6	9.36	106			
2,4,5-Trichlorophenol	0.083	0.010	0.1000	0	82.6	16.5	123			
2,4,6-Trichlorophenol	0.049	0.010	0.1000	0	48.7	11.3	117			
Cresols, Total	0.29	0.010	0.3000	0	96.4	23.2	151			
Surr: 2-Fluorophenol	0.12		0.2000		62.1	20.9	115			
Surr: Phenol-d5	0.14		0.2000		69.5	13.6	102			
Surr: 2,4,6-Tribromophenol	0.17		0.2000		83.7	11.3	133			
Surr: Nitrobenzene-d5	0.11		0.1000		108	49.4	119			
Surr: 2-Fluorobiphenyl	0.099		0.1000		99.3	48.2	114			
Surr: 4-Terphenyl-d14	0.096		0.1000		96.5	35.5	125			

Sample ID **1505a00-001amsd** SampType: **MSD** TestCode: **EPA Method 8270C TCLP**
Client ID: **SWMU 10-Drill Cutti** Batch ID: **19424** RunNo: **26486**
Prep Date: **5/28/2015** Analysis Date: **5/29/2015** SeqNo: **788165** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.084	0.010	0.1000	0	83.5	43.1	114	8.20	28.4	
3+4-Methylphenol	0.29	0.010	0.2000	0	144	37.8	128	36.5	29.4	RS
2,4-Dinitrotoluene	0.086	0.010	0.1000	0	85.9	36.5	125	0.0932	24.7	
Hexachlorobenzene	0.092	0.010	0.1000	0	92.5	41.4	108	2.63	20	
Hexachlorobutadiene	0.092	0.010	0.1000	0	92.1	30.4	101	6.90	29	
Hexachloroethane	0.086	0.010	0.1000	0	86.1	37.3	115	6.45	25.2	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- 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 Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company

Project: SWMU 10 Drill Cuttings

Sample ID **1505a00-001amsd** SampType: **MSD** TestCode: **EPA Method 8270C TCLP**

Client ID: **SWMU 10-Drill Cutti** Batch ID: **19424** RunNo: **26486**

Prep Date: **5/28/2015** Analysis Date: **5/29/2015** SeqNo: **788165** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrobenzene	0.090	0.010	0.1000	0	90.1	40.2	132	4.47	26.9	
Pentachlorophenol	0.023	0.010	0.1000	0	23.1	8.72	103	25.1	59.2	
Pyridine	0.076	0.010	0.1000	0	76.2	9.36	106	0.550	48	
2,4,5-Trichlorophenol	0.041	0.010	0.1000	0	41.4	16.5	123	66.5	70.8	
2,4,6-Trichlorophenol	0.029	0.010	0.1000	0	29.3	11.3	117	49.9	78	
Cresols, Total	0.37	0.010	0.3000	0	124	23.2	151	24.7	30.8	
Surr: 2-Fluorophenol	0.053		0.2000		26.5	20.9	115	0	0	
Surr: Phenol-d5	0.10		0.2000		52.2	13.6	102	0	0	
Surr: 2,4,6-Tribromophenol	0.079		0.2000		39.4	11.3	133	0	0	
Surr: Nitrobenzene-d5	0.10		0.1000		100	49.4	119	0	0	
Surr: 2-Fluorobiphenyl	0.095		0.1000		94.8	48.2	114	0	0	
Surr: 4-Terphenyl-d14	0.083		0.1000		82.7	35.5	125	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- 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 Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company
Project: SWMU 10 Drill Cuttings

Sample ID	**MB-19433**	SampType:	**MBLK**		TestCode:	**MERCURY, TCLP**					
Client ID:	**PBW**	Batch ID:	**19433**		RunNo:	**26466**					
Prep Date:	**5/28/2015**	Analysis Date:	**5/28/2015**		SeqNo:	**786651**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.020								

Sample ID	**LCS-19433**	SampType:	**LCS**		TestCode:	**MERCURY, TCLP**					
Client ID:	**LCSW**	Batch ID:	**19433**		RunNo:	**26466**					
Prep Date:	**5/28/2015**	Analysis Date:	**5/28/2015**		SeqNo:	**786652**	Units:	**mg/L**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		ND	0.020	0.005000	0	99.2	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company

Project: SWMU 10 Drill Cuttings

Sample ID **MB-19423** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **PBS** Batch ID: **19423** RunNo: **26461**

Prep Date: **5/27/2015** Analysis Date: **5/28/2015** SeqNo: **786539** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	25								
Magnesium	ND	25								
Potassium	ND	50								
Sodium	ND	25								

Sample ID **LCS-19423** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **LCSS** Batch ID: **19423** RunNo: **26461**

Prep Date: **5/27/2015** Analysis Date: **5/28/2015** SeqNo: **786540** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2600	25	2500	0	106	80	120			
Magnesium	2600	25	2500	0	104	80	120			
Potassium	2500	50	2500	0	101	80	120			
Sodium	2600	25	2500	0	102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1505A00**

01-Jun-15

Client: Western Refining Company

Project: SWMU 10 Drill Cuttings

Sample ID	**MB-19417**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: TCLP Metals**
Client ID:	**PBW**	Batch ID:	**19417**	RunNo:	**26461**
Prep Date:	**5/27/2015**	Analysis Date:	**5/28/2015**	SeqNo:	**786566** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	**LCS-19417**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: TCLP Metals**
Client ID:	**LCSW**	Batch ID:	**19417**	RunNo:	**26461**
Prep Date:	**5/27/2015**	Analysis Date:	**5/28/2015**	SeqNo:	**786567** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	112	80	120			
Barium	ND	100	0.5000	0	103	80	120			
Cadmium	ND	1.0	0.5000	0	107	80	120			
Chromium	ND	5.0	0.5000	0	101	80	120			
L	ND	5.0	0.5000	0	102	80	120			
Selenium	ND	1.0	0.5000	0	110	80	120			
Silver	ND	5.0	0.1000	0	107	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1505A00 RcptNo: 1

Received by/date: AT 05/22/15

Logged By: Ashley Gallegos 5/22/2015 8:20:00 AM

Completed By: Ashley Gallegos 5/22/2015 9:09:40 AM

Reviewed By: TO 05/22/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
    # of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? Yes ☑ No ☐ Checked by:
    (If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING

GALLUP REFINERY

Mailing Address: 92 GIANT CROSSING ROAD

Gallup, NM 87301

Phone #: 505 - 722-3833

Email or Fax#: 505-863-0930

QA/QC Package:

X Standard ☐ Level 4 (Full Validation)

Accreditation:

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standard X Rush ASAP

Project Name:

SWMU 10 - Drill Cuttings

Project #:

PO # 20825281 /GL #114.233120

Project Manager:

Cheryl Johnson

Cheryl.johnson@wnr.com

Sampler: C. Johnson

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1505A00	8015B (DRO/GRO/MRO) Extended	CATIONS/ANIONS	8260B - TCLP	8270 - TCLP	RCRA 8 METALS - TCLP	RCI			8260B +MTBE	8270 + PHENOLS	CATIONS/ANIONS	8015B EXTENDED	WQCC METALS including RCRA 8 Metals (TOTAL & DISSOLVED)			Air Bubbles (Y or N)
5/20/2015	1305	Soil	SWMU 10 - Drill Cuttings	4-8oz jars	None	-001	X	X	X	X	X	X										

Date:	Time	Relinquished by:	Received by:	Date	Time
5-20-15	1400			5-21-15	900
5-22-15	820			05/22/15	0820

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Appendix E

Quality Assurance/Quality Control Review

1.0 DATA VALIDATION INTRODUCTION

This summary presents data verification results for soil and groundwater samples collected from soil boring and monitoring wells installed at SWMU10 at the Gallup Refinery. The data review was performed in accordance with Provision IV.J.3.b (Review of Field and Laboratory QA/QC Data) of the RCRA Permit issued by NMED in October 2013, USEPA Functional Guidelines for Organic and Inorganic Data Review, and quality assurance and control parameters set by the project laboratory Hall Environmental Analysis Laboratory, Inc.

A total of 48 soil samples and 8 groundwater samples (excluding QA samples) were collected from April 28, 2015 through May 14, 2015 in accordance with the SWMU10 Investigation Work Plan (Western Refining Southwest, Inc., 2014). Soil and groundwater samples were submitted to Hall Environmental Analysis Laboratory for the following parameters in accordance with the approved Work Plan:

- volatile organic compounds (VOCs) by USEPA Method 8260B;
- semi-volatile organic compounds (SVOCs) by USEPA Method 8270;
- Gasoline, diesel, and motor oil range organics by SW-846 Method 8015B;
- Total recoverable and dissolved metals (Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, lead, nickel, selenium, silver, vanadium, and zinc) by SW846 Method 6010/6020;
- Chromium VI by SW-846 method 3060A;
- Tetraethyl lead by SW-846 method 3546;
- Cyanide by SW-846 method 9012; and
- Mercury by EPA Method 7470.

The groundwater samples were analyzed for water quality parameters including, nitrate, nitrite, total dissolved solids, sulfate, chloride, bicarbonate, carbonate, and total alkalinity.

Additionally, 20 quality assurance samples consisting of trip blanks, field blanks, equipment rinsate blanks, and field duplicates were collected and analyzed as part of the investigation activities. Table A-1 presents a summary of the field sample identifications, laboratory sample identifications, and sample collection dates.

2.0 QUALITY CONTROL PARAMETERS REVIEWED

Sample results were subject to a Level II data review that includes an evaluation of the following quality control (QC) parameters:

- Chain-of-Custody;
- Sample Preservation and Temperature Upon Laboratory Receipt
- Holding Times;
- Blank Contamination (method blanks, trip blanks, field blanks, and equipment rinsate blanks);
- Surrogate Recovery (for organic parameters);
- Laboratory Control Sample (LCS) Recovery and Relative Percent Difference (RPD);
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recovery and RPD;
- Duplicates (field duplicate, laboratory duplicate); and
- Other Applicable QC Parameters.

The data qualifiers used to qualify the analytical results associated with QC parameters outside of the established data quality objectives are defined below:

J+ The analyte was positively identified; however, the result should be considered an estimated value with a potential high bias.

J- The analyte was positively identified; however, the result should be considered an estimated value with a potential low bias.

UJ The reporting limit for a constituent that was not detected is considered an estimated value.

R Quality control indicates that the data is not usable.

Results qualified as “J+”, “J-“, or “UJ” are of acceptable data quality and may be used quantitatively to fulfill the objectives of the analytical program, per EPA guidelines.

Results for the performance monitoring events that required qualification based on the data verification are summarized in Table A-2.

2.1 CHAIN-OF-CUSTODY

The chain-of-custody documentation associated with project samples was found to be complete. Chain-of-custodies included sample identifications, date and time of collection, requested parameters, and relinquished/received signatures.

2.2 SAMPLE PRESERVATION AND TEMPERATURE UPON LABORATORY RECEIPT

Samples collected were received preserved and intact by Hall Environmental Laboratories, Inc. Samples were received by the laboratory at a temperature of 6.0 degrees Celsius or lower. Data qualification on lower temperature samples was not required. The hexavalent chromium field sample SWMU 10-12-GW was received at a pH of 7.5 rather than the range of 8 to 10 units. The field sample was not qualified.

2.3 HOLDING TIMES

All samples were extracted and analyzed within method-specified holding time limits with the exception of the following:

- Lab Report 1505618 - Sample SWMU 10 EB06 was extracted 2 days after the 7 day holding time. This affected only the Method 8270C semi volatile analyses and only one sample. Since results may be biased low, the sample non-detect results were qualified "UJ".

See Table A-2 for qualified data.

2.4 BLANK CONTAMINATION

2.4.1 Method Blank

Method blanks were analyzed at the appropriate frequency. Target compounds were not detected in the method blanks, with the exception of the following:

- 1,2,4-Trimethylbenzene, acetone, 2-butanone (MEK), chloromethane, and 1,1-dichloroethane were detected in the blank for batch 19008. Acetone, 2-butanone, chloromethane, and 1,1-dichloroethane were not detected in the associated samples and qualification was not required. 1,2,4-Trimethylbenzene was detected at concentrations greater than 5x blank in associated samples; and qualification of the field samples was not necessary.
- Zinc was detected in the method blank for batch 19025. Zinc was detected at similar concentrations in associated sample SWMU 10-3-GW; and the field sample was qualified with a" J+".
- Toluene and 2-butanone were detected in the blank for batch 19032. Toluene was detected in 2 associated samples and 2-butanone was detected in 10 associated samples at similar concentrations; and the field samples were qualified with a" J+".

- Lead, iron and zinc were detected in the method blank for batch for 19080. Lead, iron and zinc were detected in associated samples at concentrations greater than 5x the concentrations in the blank; and qualification of field samples was not necessary;
- Lead and iron were detected in the method blank for batch 19081. Lead and iron were detected in associated samples. The concentration for lead in one sample SWMU 10-8 (18-20') was less than 5x the concentration in the blank and this sample was qualified "J+". The results for remaining associated samples were greater than 5x the blank and qualification was not necessary.
- Cadmium and iron were detected in the method blank for batch 19082. Cadmium was not detected in associated samples. Iron was detected in associated samples but the concentrations were greater than 5x the blank and qualification of field samples was not necessary.
- 2-Butanone and toluene were detected in the method blank for batch 19107. 2-Butanone was detected in six associated samples at similar concentrations; and the field samples were qualified "J+". Toluene was detected in associated samples at concentrations greater than 5x the blank and qualification of the field samples was not necessary.
- 2-Butanone was detected in the blank for batch 19243. 2-Butanone was detected in three associated samples SWMU 10-16 (2-4'), SWMU 10-16 (4.5-5') and SWMU 10-16 (8-9") at similar concentrations; and the field samples were qualified "J+".
- Iron and silver were detected in the method blank for batch 19259. Silver was not detected in associated samples. Iron was detected in associated samples but the concentrations were greater than 5x the blank; and field samples were not qualified.
- Iron was detected in the blank for batch 19279. Iron was detected in associated samples but the concentrations were greater than 5x the blank and field samples were not qualified.
- Iron was detected in the blank for batch 19280. Iron was detected in associated samples but the concentrations were greater than 5x the blank and field samples were not qualified.
- Iron was detected in the blank for batch 19333. Iron was detected in associated samples but the concentrations were greater than 5x the blank and field samples were not qualified.
- Mercury was detected in the blank for batch 19401. Mercury was also detected in the equipment blank EB06 and in an associated sample SWMU 10-11-GW at similar concentrations. The field samples were qualified "J+".

- Beryllium was detected in the method blank for batch R26030. Beryllium was detected in three associated samples SWMU 10-1-GW, SWMU 10-3-GW and SWMU 10-5-GW at similar concentrations. The field samples were qualified "J+".
- 2-Butanone, chloroethane, and chloromethane were detected in the method blank for batch R26144. 2-Butanone, chloroethane, and chloromethane were not detected in associated samples and qualification of field samples is not necessary.
- 1,2,4- Trimethylbenzene, 2-butanone, and toluene were detected in the method blank for batch R25982. 1,2,4- Trimethylbenzene was detected in associated samples SWMU 10-1 (2-4') and SWMU 10-8 (4-6') at a similar concentration and the field samples were flagged "J+". 2-Butanone was not detected and toluene was detected in associated samples but concentrations were 5x the blank; and qualification of field samples is not necessary.
- 1,2,4-Trimethylbenzene, 1,2-dichloroethane, bromomethane., and chloroethane were detected in the blank for batch R26221. 1,2,4-Trimethylbenzene was detected in associated samples but concentrations were 5x the blank; and bromomethane, chloroethane, and 1,2-Dichloroethane were not detected in associated samples. Qualification of field samples was not necessary.
- Silver was detected in the method blank for analytical batch R25881. Silver was not detected in the associated sample and qualification was not required.
- Bromomethane and 1,2,4-trimethylbenzene were detected in the method blank for batch R26209; Bromomethane was detected in associated samples SWMU 10-11 (8-10"), SWMU 10-13 (6-8') and SWMU 10-14 (6-8') at similar concentrations; and field samples were flagged "J+". 1,2,4-Trimethylbenzene was detected in associated samples but concentrations were 5x the blank; and qualification of field samples was not necessary.
- Barium was detected in the blank for batch R26242. Barium was detected in associated samples but concentrations were 5x the blank; and qualification of field samples is not necessary.
- Silver was detected in the blank for batch R26291. Silver was not detected in associated samples; and qualification of field samples was not necessary.
- 1,2,4-Trimethylbenzene, 1,2-dichlorethane, and vinyl chloride were detected in the blank for batch R26332. 1,2,4-Trimethylbenzene was detected in associated samples SWMU 10-12-GW, SWMU 10-14-GW, SWMU 10-16-GW and two Trip Blanks at similar concentrations; and field samples were flagged "J+". 1,2-Dichlorethane and vinyl chloride were detected in associated sample SWMU 10-16-GW at similar concentrations and field samples were flagged "J+".

See Table A-2 for qualified data.

2.4.2 Trip Blank

Trip blanks were analyzed at the appropriate frequency as specified in the Permit. Target compounds were not detected in the trip blanks with the following exceptions:

Lab Report 1505698

- The VOCs ethylbenzene (0.11-J ug/L), naphthalene (0.31-J ug/L), 1-methylnaphthalene (0.71-J ug/L), 2-methylnaphthalene (1.1-J ug/L), 1,2,4-trimethylbenzene (0.29-J ug/L), and xylenes (0.041-J ug/L) were detected in TRIP Blank Sample No. 1501698-002a. The analytes were detected in the groundwater sample 1505698-001a associated with this trip blank at concentrations more than 5x the concentration detected in the blank. Sample results were not qualified; and

Lab Report 1505700

- The VOCs toluene (0.14-J ug/L) and 1,2,4-trimethylbenzene (0.18-J ug/L) were detected in TRIP Blank Sample No. 1505700-002a. Toluene was not detected and 1,2,4-trimethybenzene was detected in the groundwater sample 1505700-001a (SWMU 10-12-GW) associated with this trip blank. The detected concentration of 1,2,4-trimethylbenzene (0.66 ug/L) was less than 5 times the concentration in the trip blank and may be biased high. The 1,2,4-trimethylbenzene result for the field sample was flagged "J+".

See Table A-2 for qualified data.

2.4.3 Field Blanks/Equipment Rinsate Blank

Field and equipment rinsate blanks were collected as specified in the SWMU10 Investigation Work Plan and the Permit.

2.4.4 Common Laboratory Contaminants

Per USEPA guidelines, common laboratory contaminants for VOC analysis are acetone, 2-butanone (MEK), cyclohexane, chloromethane, and methylene chloride. Common laboratory contaminants for SVOC analysis include phthalates. Data qualification was required for MEK in sample batches 19032, 19107 and 19243 where the laboratory contaminant was detected in the blank. Data qualification was not required for other samples and laboratory contaminants since there was no detection in blanks or field analytical results were not detected or were detected at concentrations greater than 10 times the blank concentration in field samples. See Table A-2 for qualified data.

2.4.5 Methanol Blanks

Methanol Blanks provided by the laboratory were analyzed for VOCs. There were no analytes detected in the methanol blanks above the respective laboratory reporting limits.

2.5 SURROGATE RECOVERY

Surrogate recoveries for the organic and inorganic analyses were performed at the required frequency and were within laboratory acceptance limits, with the following exceptions:

Lab Report 1504C86

- Surrogate recovery for nitrobenzene-d6 was high and above the acceptance limit for field sample SWMU 10 EB01. The surrogate recovery for five of the six surrogates included in Method 8270C were within limits. Since only one surrogate was outside limits, the associated field sample results for semi-volatile organic compounds were not qualified.

Lab Report 1505002

- Surrogate recovery for nitrobenzene-d6 was high and above the acceptance limit for field sample SWMU 10 EB02. The surrogate recovery for five of the six surrogates included in Method 8270C were within limits. Since only one surrogate was outside limits, the associated field sample results for semi-volatile organic compounds were not qualified.

Lab Report 1505003

- Surrogate recovery for di-n-octyl phthalate (DNOP) was below the acceptance limit for field samples SWMU 10-5 (0-2') and SWMU 10-5 (4-6'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8015 diesel range organics (DRO) or matrix effects; therefore data qualification was not required.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field sample SWMU 10-5 (0-2'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 1505004

- Surrogate recovery for DNOP was below the lower acceptance limit for field sample SWMU 10-4 (2-4'). Low surrogate was related to required sample dilution for analytical analysis by Method 8015 DRO or matrix effects; therefore data qualification was not required.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field sample SWMU 10 DUP01. Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 1505005

- Surrogate recovery for bromofluorobenzene (BFB) was high and above the upper acceptance limit for field sample SWMU 10-3-GW. The associated field sample results for Method 8015 gasoline range organics (GRO) are qualified J+ due to a potential high bias.

Lab Report 1505057

- Surrogate recovery for DNOP was below the lower acceptance limit for field sample SWMU 10-8 (2-4'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8015 DRO or matrix effects; therefore data qualification was not required.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field samples SWMU 10-9 (4-6') and SWMU 10-8 (2-4'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 1505058

- Surrogate recovery for DNOP was below the lower acceptance limit for field sample SWMU 10-10 (4-6'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8015 DRO or matrix effects; therefore data qualification was not required.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field sample SWMU 10-10 (4-6'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 1505218

- Surrogate recovery for BFB was high and above the upper acceptance limit for field sample SWMU 10-5-GW. The associated field sample results for Method 8015 GRO are qualified J+ due to a potential high bias. Non-detect results are not qualified.
- Surrogate recoveries for 2-fluorophenol and 2,4,6-tribromophenol were below the acceptance limit for field sample SWMU 10-5-GW. The surrogate recovery for three of the six surrogates included in Method 8270C were within limits. Since only two of six surrogates were outside limits, the associated field sample results for semi-volatile organic compounds were not qualified.

Lab Report 1505570

- Surrogate recovery for DNOP was below the lower acceptance limit for field samples SWMU 10-14 (6-8') and SWMU 10-11 (4-6'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8015 DRO or matrix interference; therefore data qualification was not qualified.
- Surrogate recovery for DNOP was high and above the upper acceptance limit for field sample SWMU 10-11 (8-10'). The associated field sample results for Method 8015 GRO are qualified J+ due to a potential high bias. Non-detect results are not qualified.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field samples SWMU 10-9 (4-6') and SWMU 10-8 (2-4'). Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 15056174

- Surrogate recovery for DNOP was below the lower acceptance limit for field samples SWMU 10-13 (6-8'), SWMU 10-17 (6-8'), and SWMU 10 DUP04. Low surrogate recovery was due to required sample dilution for analytical analysis by Method 8015 DRO or matrix effects; therefore data qualification was not qualified.
- Surrogate recoveries for Method 8270C were below the lower acceptance limits for field samples SWMU 10-17 (6-8') and SWMU DUP04. Low surrogate recovery was related to required sample dilution for analytical analysis by Method 8270C or matrix effects; therefore data qualification was not required.

Lab Report 1505709

- Surrogate recovery for nitrobenzene d-5 was high and above the upper acceptance limit for field sample SWMU 10 DUP01GW. The surrogate recovery for five of the six surrogates included in Method 8270C were within limits. Since only one of six surrogates was outside limits, the associated field sample results for semi-volatile organic compounds were not qualified.
- Surrogate recovery for dibromofluorobenzene was high and above the acceptance limit for field sample SWMU10 DUP01GW. The surrogate recovery for four of the five surrogates included in Method 8260 were within limits. Since only one of five surrogates was outside limits, the associated field sample results for volatile organic compounds were not qualified.

See Table A-2 for qualified data.

2.6 LCS RECOVERY AND RELATIVE PERCENT DIFFERENCE

Laboratory control samples (LCS0/LCS duplicates were performed at the required frequency and were evaluated based on the following criteria:

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate, but the analyte was not detected in the associated batch, then data qualification was not required.
- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate and the analyte was detected in the associated batch, then the analyte results were qualified "J+" to account for a potential high bias.
- If the analyte recovery was below acceptance limits for LCS or LCS duplicate then the analyte results in the associated analytical batch were qualified ("UJ" for non-detects and "J-" for detected results) to account for a potential low bias.

LCS/LCSD percent recoveries and relative percent differences (RPDs) were within acceptance limits and no qualification was required.

2.7 MS/MSD RECOVERY AND RELATIVE PERCENT DIFFERENCE

Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples were performed at the required frequency and were evaluated by the following criteria:

- If the MS or MSD recovery for an analyte was above acceptance limits but the analyte was not detected in the associated analytical batch, then data qualification was not required.
- If the MS or MSD recovery for an analyte was above acceptance limits and the analyte was detected in the associated analytical batch, then analyte results were qualified "J+" to account for a potential high bias.
- Low MS/MSD recoveries for organic or inorganic parameters result in sample qualification of the associated analytical batch with a "J-".
- Results were not qualified based on non-project specific MS/MSD (i.e., batch QC) recoveries.

MS/MSD percent recoveries and RPDs were within acceptance limits except for the following:

Lab Report 1505003

- The MS/MSD recoveries for benzene and toluene for Method 8260B Batch 19032 were below the lower acceptance limits for field sample SWMU 10-5 (22-24). Low recovery was related to dilution or matrix interference. Since results may be biased low, detected results in the batch are qualified "J-"and non-detect results are qualified "UJ".

Lab Report 1505057

- The MS recovery of 127% and the MSD recovery of 172% for mercury was above the acceptance limit of 125% for Method 7471 batch 19445 and field sample SWMU 10-9 (2-4'). Since results may be biased high, the detected results are qualified "J+".

Lab Report 1505218

- The MS/MSD recovery of 166% for BFB is above the upper limit of 120% for Method 8015 GRO batch R26016 in field sample SWMU 10-5-GW. The associated field sample results for Method 8015 GRO are qualified J+ due to a potential high bias. Non-detect samples were not qualified.
- The MS/MSD recoveries were low and the relative percent difference (RPD) were outside the acceptance limits for several chemicals and surrogates for Method 8270C batch 19150 performed for field sample SWMU 10-5-GW. Low recovery was related to dilution or matrix interference. Since results may be biased low, the associated semi-volatile results were qualified "J-" if detected or "UJ" if non-detect.

Lab Report 1505570

- The MS/MSD recoveries for all compounds and surrogates for Method 8270C batch 19270 were within limits for field sample SWMU 10-14 (4-6'). The RPD of 30.4 for N-nitroso-n-propyl amine was above the limit of 27.5. Since the RPDs for other compounds were within limits, and the N-nitroso-n-propyl amine RPD was only slightly out of specifications, the field data were not qualified.
- The MS recovery of 33.2% and the MSD recovery of 33.3% for antimony was below the lower limit of 75% for Method 6010 batch 19259 and field sample SWMU 10-14 (6-8'). Low recovery was related to dilution or matrix interference. The associated field sample results for antimony are qualified "UJ" due to a potential low bias.
- The MS recovery for lead was within limits and MSD recovery of 74.4 for lead was below the acceptance limit of 75% for Method 6010 batch 19259 and field sample SWMU 10-14 (6-8'). Since MSD recovery was only slightly low, the associated field sample results were not qualified.

Lab Report 1505698

- MS recoveries for benzene (16.4%), toluene (13.4%), chlorobenzene (11.7%), 1,1-dichloroethylene (6.58%), and trichloroethylene (9.98%) were below the lower acceptance limit of 30% for Method 8260 batch R26322 and field sample SWMU 10-11-GW. The RPDs for these compounds were outside acceptance limits. Low recovery was related to dilution or matrix interference. The field sample results for volatile organics are qualified "J-"and non-detect results are qualified "UJ" due to a potential low bias.

See Table A-2 for qualified data.

2.8 DUPLICATES

2.8.1 Field Duplicates

Field duplicates were collected at a rate as stated in the approved SWMU10 Investigation Work Plan. The RPDs between the field duplicate and its associated sample were calculated and are presented in Table A-3. The field duplicates were evaluated by the following criteria:

- If an analyte was detected at a concentration greater than five times the method reporting limit, the RPD should be less than 35 percent for soil and 25 percent for ground water samples.
- If an analyte was detected at a concentration that is less than five times the method reporting limit, then the difference between the sample and the field duplicate should not exceed the method reporting limit.
- Duplicate RPDs are calculated by dividing the difference of the concentrations by the average of the concentrations.

Field duplicate RPDs were within acceptance limits except for the following soil sample:

- GRO and DRO for field sample SWMU 10-9 (4-6);
- 1,2,4-Trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, hexachlorobutadiene, n-butylbenzene, n-propylbenzene, sec-butylbenzene, and xylene(s) for field sample SWMU10-9 (4-6').

See Table 3A for a field duplicate summary.

3.0 COMPLETENESS SUMMARY

The following equation was used to calculate the technical completeness:

$$\% \text{ Technical Completeness} = \left(\frac{\text{Number of usable results}}{\text{Number of reported results}}\right) \times 100$$

The technical completeness attained for SWMU10 RCRA Investigation activities was 100 percent. The completeness results are provided in Table A-4. The analytical results for the required analytes per the approved SWMU10 Work Plan were considered usable for the intended purposes and the project DQOs have been met.

Table A-1
Sample Identification
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Lab ID	Date Collected	Sample Type
SWMU 10 EB01	1504c86-001a	4/28/2015	EB
SWMU 10-1 (2-4')	1504c87-001a	4/28/2015	N
SWMU 10-1 (4-6')	1504c87-002a	4/28/2015	N
SWMU 10-1 (18-20')	1504c87-003a	4/28/2015	N
SWMU 10-3 (2-4')	1504c87-004a	4/28/2015	N
SWMU 10-3 (6-8')	1504c87-005a	4/28/2015	N
SWMU 10-3 (18-20')	1504c87-006a	4/28/2015	N
SWMU 10-1-GW	1505001-001a	4/28/2015	GW
Trip Blank	1505001-002a	4/28/2015	TB
SWMU 10 EB02	1505002-001a	4/29/2015	EB
SWMU 10-5 (0-2')	1505003-001a	4/29/2015	N
SWMU 10-5 (2-4')	1505003-002a	4/29/2015	N
SWMU 10-5 (4-6')	1505003-003a	4/29/2015	N
SWMU 10-5 (14-16')	1505003-004a	4/29/2015	N
SWMU 10-5 (22-24')	1505003-005A	4/29/2015	N
SWMU 10-4 (0-2')	1505004-001A	4/29/2015	N
SWMU 10-4 (2-4')	1505004-002a	4/29/2015	N
SWMU 10-4 (6-8')	1505004-003A	4/29/2015	N
SWMU 10-4 (18-20')	1505004-004A	4/29/2015	N
SWMU 10 DUP01	1505004-005A	4/29/2015	FD
SWMU 10-3-GW	1505005-001a	4/29/2015	GW
Trip Blank	1505005-002a	4/29/2015	TB
SWMU 10 EB04	1505047-001a	5/1/2015	EB
SWMU 10 EB03	1505048-001a	4/30/2015	EB
SWMU 10-9 (2-4')	1505057-001A	4/30/2015	N
SWMU 10-9 (4-6')	1505057-002a	4/30/2015	N
SWMU 10-9 (18-20')	1505057-003A	4/30/2015	N
SWMU 10-9DUP02	1505057-004a	4/30/2015	FD
SWMU 10-8 (2-4')	1505057-005a	4/30/2015	N
SWMU 10-8 (4-6')	1505057-006a	4/30/2015	N
SWMU 10-8 (18-20')	1505057-007A	4/30/2015	N
SWMU 10-10 (2-4')	1505058-001A	4/30/2015	N
SWMU 10-10 (4-6')	1505058-002a	4/30/2015	N
SWMU 10-10 (18-20')	1505058-003A	4/30/2015	N
SWMU 10-7 (2-4')	1505059-001A	5/1/2015	N
SWMU 10-7 (4-6')	1505059-002A	5/1/2015	N
SWMU 10-7 (18-20')	1505059-003A	5/1/2015	N
SWMU 10-5-GW	1505218-001a	5/4/2015	GW
TRIP BLANK	1505218-002a	5/4/2015	TB
SWMU 10 EB05	1505222-001a	5/4/2015	EB
TRIP BLANK	1505222-002a	5/4/2015	TB
SWMU 10-6 (2-4')	1505223-001A	5/4/2015	N
SWMU 10-6 (10-12')	1505223-002A	5/4/2015	N
SWMU 10-2 (0-2')	1505223-003A	5/4/2015	N
SWMU 10-2 (2-4')	1505223-004A	5/4/2015	N
SWMU 10 DUP03	1505223-005A	5/4/2015	FD
MEOH BLANK	1505223-006	5/4/2015	FB
SWMU 10-14 (6-8')	1505570-001a	5/12/2015	N
SWMU 10-14 (21-23')	1505570-002a	5/12/2015	N
SWMU 10-11 (4-6')	1505570-003a	5/12/2015	N
SWMU 10-11 (8-10')	1505570-004a	5/12/2015	N
SWMU 10-11 (18-20')	1505570-005A	5/12/2015	N
SWMU 10-12 (6-8')	1505617-001a	5/12/2015	N
SWMU 10-12 (20-22')	1505617-002a	5/12/2015	N
SWMU 10-13 (2-4')	1505617-003a	5/13/2015	N
SWMU 10-13 (6-8')	1505617-004a	5/13/2015	N
SWMU 10-13 (18-20')	1505617-005a	5/13/2015	N
SWMU 10-15 (2-4')	1505617-006a	5/13/2015	N
SWMU 10-15 (4-6')	1505617-007a	5/13/2015	N

Table A-1
Sample Identification
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Lab ID	Date Collected	Sample Type
SWMU 10-15 (18-20')	1505617-008a	5/13/2015	N
SWMU 10-17 (6-8')	1505617-009a	5/13/2015	N
SWMU 10 DUP04	1505617-010a	5/13/2015	FD
MEOH BLANK	1505617-011	5/13/2015	FB
SWMU 10 EB06	1505618-001a	5/12/2015	EB
SWMU 10-11-GW	1505698-001a	5/14/2015	GW
Trip Blank	1505698-002a	5/14/2015	TB
SWMU 10-12-GW	1505700-001a	5/14/2015	GW
Trip Blank	1505700-002a	5/14/2015	TB
SWMU 10-14-GW	1505701-001a	5/14/2015	GW
Trip Blank	1505701-002a	5/14/2015	TB
SWMU 10-16 (2-4')	1505705-001a	5/13/2015	N
SWMU 10-16 (4-5.5')	1505705-002a	5/13/2015	N
SWMU 10-16 (8-9')	1505705-003a	5/13/2015	N
SWMU 10-15-GW	1505708-001a	5/14/2015	GW
TRIP BLANK	1505708-002a	5/14/2015	TB
SWMU 10 DUP01GW	1505709-001a	5/14/2015	FD
TRIP BLANK	1505709-002a	5/14/2015	TB
SWMU 10-16-GW	1505710-001a	5/14/2015	GW

Notes:
N = Normal field sample
FD = Field duplicate
FB = Field Blank
TB = Trip Blank
EB = Equipment Blank
GW = Groundwater

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 DUP01	4/29/2015	1,3,5-Trimethylbenzene	0.000422	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Methylene chloride	0.00051	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	sec-Butylbenzene	0.000534	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Ethylbenzene	0.000638	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	2-Hexanone	0.000653	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2,4-Trimethylbenzene	0.000972	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Benzene	0.00104	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Xylenes, Total	0.00171	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Toluene	0.00232	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Acetone	0.0166	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Barium	380	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP01	4/29/2015	2-Butanone	0.00253	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 DUP01	4/29/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01	4/29/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10 DUP01GW	5/14/2015	Benzene	0.4	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	2-Butanone	2.9	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Acetone	16	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Methyl tert-butyl ether (MTBE)	150	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 DUP01GW	5/14/2015	1,2,4-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 DUP01GW	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP01GW	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10 DUP04	5/13/2015	Fluorene	3.2	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	Phenanthrene	6	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	Naphthalene	8.8	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	2,4-Dimethylphenol	18	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	Phenol	26	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	1-Methylnaphthalene	28	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	2-Methylphenol	29	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	2-Methylnaphthalene	45	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 DUP04	5/13/2015	3+4-Methylphenol	60	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10 EB05	5/4/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4,5-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4,6-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4-Dichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4-Dimethylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4-Dinitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,6-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Chloronaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Chlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	3,3´-Dichlorobenzidine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	3+4-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	3-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 EB05	5/4/2015	4,6-Dinitro-2-methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Bromophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Chloro-3-methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Chloroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Chlorophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	4-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Acenaphthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Acenaphthylene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Aniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Azobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benz(a)anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzo(a)pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzo(b)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzo(g,h,i)perylene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzo(k)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzoic acid	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Benzyl alcohol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Bis(2-chloroethoxy)methane	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Bis(2-chloroethyl)ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Bis(2-chloroisopropyl)ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Bis(2-ethylhexyl)phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Butyl benzyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Carbazole	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Chrysene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Dibenz(a,h)anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Dibenzofuran	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Diethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Dimethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Di-n-butyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Di-n-octyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Fluorene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Hexachlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Hexachlorocyclopentadiene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Hexachloroethane	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Indeno(1,2,3-cd)pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Isophorone	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 EB05	5/4/2015	Naphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Nitrobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	N-Nitrosodi-n-propylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	N-Nitrosodiphenylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Phenanthrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Phenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Pyridine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	2,4-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	N-Nitrosodimethylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB05	5/4/2015	Pentachlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10 EB06	5/12/2015	Mercury	0.00015	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10 EB06	5/12/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4,5-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4,6-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4-Dichlorophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4-Dimethylphenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4-Dinitrophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,4-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2,6-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Chloronaphthalene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Chlorophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	2-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	3,3´-Dichlorobenzidine	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	3+4-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	3-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4,6-Dinitro-2-methylphenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Bromophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Chloro-3-methylphenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Chloroaniline	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Chlorophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	4-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 EB06	5/12/2015	Acenaphthene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Acenaphthylene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Aniline	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Anthracene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Azobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benz(a)anthracene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzo(a)pyrene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzo(b)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzo(g,h,i)perylene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzo(k)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzoic acid	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Benzyl alcohol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Bis(2-chloroethoxy)methane	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Bis(2-chloroethyl)ether	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Bis(2-chloroisopropyl)ether	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Bis(2-ethylhexyl)phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Butyl benzyl phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Carbazole	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Chrysene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Dibenz(a,h)anthracene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Dibenzofuran	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Diethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Dimethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Di-n-butyl phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Di-n-octyl phthalate	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Fluoranthene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Fluorene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Hexachlorobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Hexachlorocyclopentadiene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Hexachloroethane	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Indeno(1,2,3-cd)pyrene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Isophorone	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Naphthalene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Nitrobenzene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	N-Nitrosodimethylamine	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	N-Nitrosodi-n-propylamine	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	N-Nitrosodiphenylamine	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Pentachlorophenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Phenanthrene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10 EB06	5/12/2015	Phenol	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Pyrene	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10 EB06	5/12/2015	Pyridine	ND	ug/l	Water	UJ	Qualified low bias since extracted 2 days after the 7 day holding time
SWMU 10-1 (18-20')	4/28/2015	Methylene chloride	0.000566	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	sec-Butylbenzene	0.000715	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,3,5-Trimethylbenzene	0.000993	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2,4-Trimethylbenzene	0.00162	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Ethylbenzene	0.00192	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Acetone	0.00324	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Xylenes, Total	0.00647	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Toluene	0.00836	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Benzene	0.0146	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	2-Butanone	0.00156	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-1 (18-20')	4/28/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (18-20')	4/28/2015	1,3,5-Trimethylbenzene	0.000993	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (2-4')	4/28/2015	1,2,4-Trimethylbenzene	0.0061	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-1 (4-6')	4/28/2015	1,3,5-Trimethylbenzene	0.000318	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	sec-Butylbenzene	0.000593	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2,4-Trimethylbenzene	0.000619	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Methylene chloride	0.000619	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Naphthalene	0.000877	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Benzene	0.00211	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Toluene	0.00253	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Methyl tert-butyl ether (MTBE)	0.00669	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Acetone	0.00926	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Ethylbenzene	0.0318	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-1 (4-6')	4/28/2015	Xylenes, Total	0.197	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	2-Butanone	0.00257	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-1 (4-6')	4/28/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-1 (4-6')	4/28/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	n-Propylbenzene	0.000372	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	sec-Butylbenzene	0.000688	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Naphthalene	0.000725	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,3,5-Trimethylbenzene	0.00151	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2,4-Trimethylbenzene	0.00238	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Ethylbenzene	0.00241	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Acetone	0.00422	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Toluene	0.0104	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Benzene	0.018	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	2-Butanone	0.00159	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-10 (18-20')	4/30/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Methylene chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (18-20')	4/30/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	2-Hexanone	0.000582	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-10 (2-4')	4/30/2015	Acetone	0.00792	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Toluene	0.000255	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	2-Butanone	0.00161	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Methylene chloride	0.00051	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2,4-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,3,5-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Benzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-10 (2-4')	4/30/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Ethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	sec-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (2-4')	4/30/2015	Xylenes, Total	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-10 (4-6')	4/30/2015	Fluorene	2.2	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-10 (4-6')	4/30/2015	Phenanthrene	4.1	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-10 (4-6')	4/30/2015	Naphthalene	5.9	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-10 (4-6')	4/30/2015	1-Methylnaphthalene	17	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-10 (4-6')	4/30/2015	2-Methylnaphthalene	25	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-11 (4-6')	5/12/2015	Mercury	0.05	mg/kg	Soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-11 (8-10')	5/12/2015	Bromomethane	0.026	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-11 (8-10')	5/12/2015	Mercury	0.014	mg/kg	Soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-11-GW	5/14/2015	1,1-Dichloroethane	0.93	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	sec-Butylbenzene	2.2	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Benzene	2.5	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	4-Isopropyltoluene	2.7	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	n-Butylbenzene	3.4	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Toluene	6	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Isopropylbenzene	8.5	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-11-GW	5/14/2015	Acetone	8.8	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	n-Propylbenzene	11	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,3,5-Trimethylbenzene	22	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Ethylbenzene	40	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Naphthalene	45	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2,4-Trimethylbenzene	64	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1-Methylnaphthalene	70	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	2-Methylnaphthalene	98	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Xylenes, Total	230	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Mercury	0.00075	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-11-GW	5/14/2015	Methyl tert-butyl ether (MTBE)	14	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-11-GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-11-GW	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Benzene	0.47	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Naphthalene	0.52	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	2-Methylnaphthalene	1.5	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Acetone	3.4	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Methyl tert-butyl ether (MTBE)	13	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2,4-Trimethylbenzene	0.66	ug/l	Water	J+/J+/J-	Qualified high bias since detected in method blank & trip blank and field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-12-GW	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-12-GW	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-12-GW	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-13 (6-8')	5/13/2015	Bromomethane	0.023	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-14 (21-23')	5/12/2015	Mercury	0.0032	mg/kg	Soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-14 (6-8')	5/12/2015	Bromomethane	0.023	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-14 (6-8')	5/12/2015	Mercury	0.0046	mg/kg	Soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-14 (6-8')	5/12/2015	Antimony	ND	mg/kg	Soil	UJ	Qualfied low since Method 6010 MS/SMSD recovery low
SWMU 10-14-GW	5/14/2015	Toluene	0.3	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Benzene	0.47	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Acetone	2.7	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Methyl tert-butyl ether (MTBE)	16	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2,4-Trimethylbenzene	0.44	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-14-GW	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-14-GW	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Benzene	0.51	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	2-Butanone	2.9	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Acetone	9.7	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Methyl tert-butyl ether (MTBE)	150	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-15-GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2,4-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

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Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-15-GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-15-GW	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16 (2-4')	5/13/2015	2-Butanone	0.00304	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-16 (4-5.5')	5/13/2015	2-Butanone	0.00146	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-16 (8-9')	5/13/2015	2-Butanone	0.00173	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-16-GW	5/14/2015	Benzene	0.24	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Xylenes, Total	0.35	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	cis-1,2-DCE	0.39	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1-Dichloroethene	0.73	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Trichloroethene (TCE)	0.77	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Acetone	1.6	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1-Dichloroethane	3.1	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Methyl tert-butyl ether (MTBE)	19	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2,4-Trimethylbenzene	0.18	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2-Dichloroethane (EDC)	0.47	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Vinyl chloride	0.47	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-16-GW	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-16-GW	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-16-GW	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
SWMU 10-17 (6-8')	5/13/2015	Fluorene	7.1	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	Phenanthrene	15	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	Naphthalene	24	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	Phenol	52	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	2-Methylphenol	56	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	1-Methylnaphthalene	76	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	3+4-Methylphenol	100	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-17 (6-8')	5/13/2015	2-Methylnaphthalene	130	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-1-GW	4/29/2015	Beryllium	0.00052	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-2 (0-2')	5/4/2015	2-Butanone	0.0038	mg/kg	Unknown	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-2 (2-4')	5/4/2015	2-Butanone	0.00283	mg/kg	Unknown	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-3 (18-20')	4/28/2015	2-Hexanone	0.000748	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Methylene chloride	0.00077	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	sec-Butylbenzene	0.000781	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,3,5-Trimethylbenzene	0.00123	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Acetone	0.00158	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2,4-Trimethylbenzene	0.00184	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Ethylbenzene	0.00231	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Xylenes, Total	0.00707	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Toluene	0.01	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Benzene	0.0141	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	2-Butanone	0.00151	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-3 (18-20')	4/28/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-3 (18-20')	4/28/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (18-20')	4/28/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Ethylbenzene	0.000313	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Methylene chloride	0.000387	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	2-Hexanone	0.000656	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Benzene	0.000872	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Xylenes, Total	0.00108	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Toluene	0.00116	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Acetone	0.0201	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	2-Butanone	0.00273	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2,4-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,3,5-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-3 (2-4')	4/28/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	sec-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (2-4')	4/28/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,3,5-Trimethylbenzene	0.000351	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Methylene chloride	0.000547	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	sec-Butylbenzene	0.000555	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2,4-Trimethylbenzene	0.000564	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	2-Hexanone	0.000588	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Ethylbenzene	0.0008	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Xylenes, Total	0.00181	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Toluene	0.00301	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Benzene	0.00319	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Acetone	0.00534	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-3 (6-8')	4/28/2015	2-Butanone	0.00136	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-3 (6-8')	4/28/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3 (6-8')	4/28/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-3-GW	4/29/2015	Gasoline Range Organics (GRO)	0.033	mg/l	Water	J+	Qualified high bias due to surrogate recovery
SWMU 10-3-GW	4/29/2015	Beryllium	0.0004	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-3-GW	4/29/2015	Zinc	0.023	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-4 (0-2')	4/29/2015	1,3,5-Trimethylbenzene	0.000347	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Methylene chloride	0.000606	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	sec-Butylbenzene	0.000645	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Ethylbenzene	0.000703	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2,4-Trimethylbenzene	0.00077	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	2-Hexanone	0.000886	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Benzene	0.00118	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Xylenes, Total	0.00182	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Toluene	0.00263	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Acetone	0.0237	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	2-Butanone	0.00407	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-4 (0-2')	4/29/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-4 (0-2')	4/29/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (0-2')	4/29/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Isopropylbenzene	0.000482	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	n-Propylbenzene	0.00051	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Methylene chloride	0.000612	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	sec-Butylbenzene	0.000714	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Naphthalene	0.000742	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Acetone	0.0018	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,3,5-Trimethylbenzene	0.00184	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2,4-Trimethylbenzene	0.00277	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Ethylbenzene	0.00291	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Xylenes, Total	0.00975	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Toluene	0.0127	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Benzene	0.0204	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	2-Butanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-4 (18-20')	4/29/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (18-20')	4/29/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-4 (6-8')	4/29/2015	2-Butanone	0.00153	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-5 (22-24')	4/29/2015	n-Propylbenzene	0.000469	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Methylene chloride	0.000565	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	sec-Butylbenzene	0.000766	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Naphthalene	0.000785	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1-Methylnaphthalene	0.000843	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	2-Methylnaphthalene	0.000852	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,3,5-Trimethylbenzene	0.00179	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Acetone	0.00186	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Ethylbenzene	0.00258	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2,4-Trimethylbenzene	0.00263	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Xylenes, Total	0.00849	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-5 (22-24')	4/29/2015	Toluene	0.0112	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Benzene	0.0179	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-5 (22-24')	4/29/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5 (22-24')	4/29/2015	2-Butanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-5-GW	5/4/2015	Gasoline Range Organics (GRO)	0.21	mg/l	Water	J+/J+	Qualified high bias due to surrogate recovery and Method GRO MS/MSD
SWMU 10-5-GW	5/4/2015	Beryllium	0.00042	mg/l	Water	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-5-GW	5/4/2015	Bis(2-chloroethyl)ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	N-Nitrosodimethylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Pentachlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4,5-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4,6-Trichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4-Dichlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4-Dimethylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4-Dinitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,6-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Chloronaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Chlorophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	3,3´-Dichlorobenzidine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	3+4-Methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	3-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4,6-Dinitro-2-methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch

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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-5-GW	5/4/2015	4-Bromophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Chloro-3-methylphenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Chloroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Chlorophenyl phenyl ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Nitroaniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	4-Nitrophenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Acenaphthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Acenaphthylene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Aniline	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Azobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benz(a)anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzo(a)pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzo(b)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzo(g,h,i)perylene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzo(k)fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzoic acid	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Benzyl alcohol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Bis(2-chloroethoxy)methane	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Bis(2-chloroisopropyl)ether	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Bis(2-ethylhexyl)phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Butyl benzyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Carbazole	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Chrysene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Dibenz(a,h)anthracene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Dibenzofuran	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Diethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Dimethyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Di-n-butyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Di-n-octyl phthalate	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Fluoranthene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Fluorene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Hexachlorobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Hexachlorocyclopentadiene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Hexachloroethane	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Indeno(1,2,3-cd)pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Isophorone	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Naphthalene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Nitrobenzene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-5-GW	5/4/2015	N-Nitrosodi-n-propylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	N-Nitrosodiphenylamine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Phenanthrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Phenol	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Pyrene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	Pyridine	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-5-GW	5/4/2015	2,4-Dinitrotoluene	ND	ug/l	Water	UJ	Qualified low bias due to Method 8270C MS/MSD recoveryand RPD for batch
SWMU 10-6 (2-4')	5/4/2015	2-Butanone	0.00176	mg/kg	Unknown	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-7 (2-4')	5/1/2015	2-Butanone	0.00273	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-7 (4-6')	5/1/2015	2-Butanone	0.00175	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-8 (18-20')	4/30/2015	n-Propylbenzene	0.000428	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Isopropylbenzene	0.000447	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	sec-Butylbenzene	0.000714	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Naphthalene	0.000809	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,3,5-Trimethylbenzene	0.00159	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2,4-Trimethylbenzene	0.00236	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Ethylbenzene	0.00285	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Acetone	0.00466	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Xylenes, Total	0.00872	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Toluene	0.0122	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Benzene	0.0178	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Lead	0.27	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-8 (18-20')	4/30/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-8 (18-20')	4/30/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	2-Butanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Methylene chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (18-20')	4/30/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-8 (2-4')	4/30/2015	Fluorene	8.1	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-8 (2-4')	4/30/2015	Naphthalene	18	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-8 (2-4')	4/30/2015	1-Methylnaphthalene	68	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-8 (2-4')	4/30/2015	2-Methylnaphthalene	89	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery

Table A-2
Qualified Data
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Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-8 (4-6')	4/30/2015	1,2,4-Trimethylbenzene	0.021	mg/kg	Soil	J+	Qualified high bias since detected in method blank & field concentration is ≤ 5x blank concentration
SWMU 10-9 (18-20')	4/30/2015	sec-Butylbenzene	0.000849	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Naphthalene	0.000873	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,3,5-Trimethylbenzene	0.00151	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2,4-Trimethylbenzene	0.00229	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Ethylbenzene	0.00242	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Acetone	0.00359	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Xylenes, Total	0.00807	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Toluene	0.0115	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Benzene	0.0159	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	2-Butanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-9 (18-20')	4/30/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Methylene chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (18-20')	4/30/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Methylene chloride	0.000438	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Benzene	0.000788	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Acetone	0.0184	mg/kg	Soil	J-	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Bis(2-ethylhexyl)phthalate	1.5	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-9 (2-4')	4/30/2015	Mercury	0.07	mg/kg	Soil	J+	Qualified high bias due to Method MS/MSD recovery
SWMU 10-9 (2-4')	4/30/2015	Toluene	0.000797	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	2-Butanone	0.00234	mg/kg	Soil	J+/ J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1,1,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1,1-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1,2,2-Tetrachloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1,2-Trichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1-Dichloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,1-Dichloroethene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-9 (2-4')	4/30/2015	1,1-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2,3-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2,3-Trichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2,4-Trichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2,4-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2-Dibromo-3-chloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2-Dibromoethane (EDB)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2-Dichloroethane (EDC)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,3,5-Trimethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,3-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,3-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1,4-Dichlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	1-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	2,2-Dichloropropane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	2-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	2-Hexanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	2-Methylnaphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	4-Chlorotoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	4-Isopropyltoluene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	4-Methyl-2-pentanone	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Bromobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Bromodichloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Bromoform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Bromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Carbon disulfide	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Carbon tetrachloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Chlorobenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Chloroethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Chloroform	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Chloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	cis-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	cis-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Dibromochloromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Dibromomethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Dichlorodifluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Ethylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Hexachlorobutadiene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Isopropylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch

Table A-2
Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
SWMU 10-9 (2-4')	4/30/2015	Methyl tert-butyl ether (MTBE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Naphthalene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	n-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	n-Propylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	sec-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Styrene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	tert-Butylbenzene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Tetrachloroethene (PCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	trans-1,2-DCE	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	trans-1,3-Dichloropropene	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Trichloroethene (TCE)	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Trichlorofluoromethane	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Vinyl chloride	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (2-4')	4/30/2015	Xylenes, Total	ND	mg/kg	Soil	UJ	Qualified low bias due to Method 8260B MS/MSD recovery for batch
SWMU 10-9 (4-6')	4/30/2015	2-Methylnaphthalene	1	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
SWMU 10-9 (4-6')	4/30/2015	1-Methylnaphthalene	1.1	mg/kg	Soil	J-	Qualified low bias due to surrogate recovery
Trip Blank	5/14/2015	Ethylbenzene	0.11	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Naphthalene	0.31	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Xylenes, Total	0.41	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1-Methylnaphthalene	0.71	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Methylnaphthalene	1.1	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Toluene	0.14	ug/l	Water	J-	Qualified low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trimethylbenzene	0.29	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trimethylbenzene	0.18	ug/l	Water	J+/J-	Qualified high bias since detected in method blank & field concentration <5x blank concentration/Qualified low bias due to Method SW8270C MSD recovery and RPD for batch
Trip Blank	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

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Qualified Data
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Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
Trip Blank	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Acetone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Benzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methyl tert-butyl ether (MTBE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
Trip Blank	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Acetone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Benzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
Trip Blank	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methyl tert-butyl ether (MTBE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2,4-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
Trip Blank	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Acetone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Benzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methyl tert-butyl ether (MTBE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
Trip Blank	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
Trip Blank	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,4-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
TRIP BLANK	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Acetone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Benzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Methyl tert-butyl ether (MTBE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,1,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,1-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1,2,2-Tetrachloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
TRIP BLANK	5/14/2015	1,1,2-Trichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloroethene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,1-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,3-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,3-Trichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,4-Trichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2,4-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dibromo-3-chloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dibromoethane (EDB)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichloroethane (EDC)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3,5-Trimethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,3-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1,4-Dichlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	1-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2,2-Dichloropropane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Butanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Hexanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	2-Methylnaphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Chlorotoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Isopropyltoluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	4-Methyl-2-pentanone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Acetone	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Benzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromodichloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromoform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Bromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Carbon disulfide	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Carbon Tetrachloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chlorobenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloroethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloroform	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Chloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	cis-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	cis-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Table A-2
Qualified Data
SWMU10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
TRIP BLANK	5/14/2015	Dibromochloromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dibromomethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Dichlorodifluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Ethylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Hexachlorobutadiene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Isopropylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Methyl tert-butyl ether (MTBE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Methylene Chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Naphthalene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	n-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	n-Propylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	sec-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Styrene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	tert-Butylbenzene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Tetrachloroethene (PCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Toluene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	trans-1,2-DCE	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	trans-1,3-Dichloropropene	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Trichloroethene (TCE)	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Trichlorofluoromethane	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Vinyl chloride	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch
TRIP BLANK	5/14/2015	Xylenes, Total	ND	ug/l	Water	UJ	Qualfied low bias due to Method SW8270C MS recovery and RPD for batch

Notes:

UJ = Estimated reporihg concentration
J- = Low bias
J+ = High bias

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-14 (0-2') Sample Result	SWMU 10 DUP01 Duplicate Result	RPD (%)
TPH (mg/kg-dry):	Gasoline Range Organics (GRO)	0.849320979 U	0.858017826 U	NC
	Diesel Range Organics (DRO)	160	150	1.6
	Motor Oil Range Organics (MRO)	330	310	1.6
VOCs (ug/kg-dry)	1,3,5-Trimethylbenzene	0.000347 J	0.000422 J	4.9
	Methylene chloride	0.000606 J	0.00051 J	4.3
	sec-Butylbenzene	0.000645 J	0.000534 J	4.7
	Ethylbenzene	0.000703 J	0.000638 J	2.4
	1,2,4-Trimethylbenzene	0.00077 J	0.000972 J	5.8
	2-Hexanone	0.000886 J	0.000653 J	7.6
	Benzene	0.00118 J	0.00104 J	3.2
	Xylenes, Total	0.00182 J	0.00171	1.6
	Toluene	0.00263	0.00232	3.1
	Acetone	0.0237	0.0166	8.8
	2-Butanone	0.00407 J	0.00253 J	11.7
	1,1,1,2-Tetrachloroethane	0.00031 U	0.00026 U	NC
	1,1,1-Trichloroethane	0.00027 U	0.00023 U	NC
	1,1,2,2-Tetrachloroethane	0.00042 U	0.00035 U	NC
	1,1,2-Trichloroethane	0.00193 U	0.00159 U	NC
	1,1-Dichloroethane	0.00045 U	0.00037 U	NC
	1,1-Dichloroethene	0.00032 U	0.00027 U	NC
	1,1-Dichloropropene	0.00035 U	0.00029 U	NC
	1,2,3-Trichlorobenzene	0.00070 U	0.00058 U	NC
	1,2,3-Trichloropropane	0.00068 U	0.00056 U	NC
	1,2,4-Trichlorobenzene	0.00072 U	0.00060 U	NC
	1,2-Dibromo-3-chloropropane	0.00057 U	0.00047 U	NC
	1,2-Dibromoethane (EDB)	0.00023 U	0.00019 U	NC
	1,2-Dichlorobenzene	0.00043 U	0.00035 U	NC
	1,2-Dichloroethane (EDC)	0.00052 U	0.00043 U	NC
	1,2-Dichloropropane	0.00041 U	0.00034 U	NC
	1,3-Dichlorobenzene	0.00033 U	0.00027 U	NC
	1,3-Dichloropropane	0.00030 U	0.00025 U	NC
	1,4-Dichlorobenzene	0.00030 U	0.00025 U	NC
	1-Methylnaphthalene	0.00076 U	0.00063 U	NC
	2,2-Dichloropropane	0.00033 U	0.00028 U	NC
	2-Chlorotoluene	0.00038 U	0.00031 U	NC
	2-Methylnaphthalene	0.00075 U	0.00062 U	NC
	4-Chlorotoluene	0.00037 U	0.00031 U	NC
	4-Isopropyltoluene	0.00075 U	0.00062 U	NC
	4-Methyl-2-pentanone	0.00081 U	0.00067 U	NC
	Bromobenzene	0.00054 U	0.00044 U	NC
	Bromodichloromethane	0.00026 U	0.00022 U	NC
	Bromoform	0.00050 U	0.00041 U	NC
	Bromomethane	0.00114 U	0.00094 U	NC
	Carbon disulfide	0.00087 U	0.00072 U	NC
	Carbon tetrachloride	0.00035 U	0.00029 U	NC
	Chlorobenzene	0.00020 U	0.00016 U	NC
	Chloroethane	0.00193 U	0.00159 U	NC
	Chloroform	0.00040 U	0.00033 U	NC
	Chloromethane	0.00023 U	0.00019 U	NC
	cis-1,2-DCE	0.00051 U	0.00042 U	NC
	cis-1,3-Dichloropropene	0.00193 U	0.00159 U	NC
	Dibromochloromethane	0.00022 U	0.00018 U	NC
	Dibromomethane	0.00109 U	0.00090 U	NC
	Dichlorodifluoromethane	0.00079 U	0.00065 U	NC
	Hexachlorobutadiene	0.00039 U	0.00032 U	NC
	Isopropylbenzene	0.00045 U	0.00037 U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-14 (0-2') Sample Result	SWMU 10 DUP01 Duplicate Result	RPD (%)
	Methyl tert-butyl ether (MTBE)	0.00081 U	0.00067 U	NC
	Naphthalene	0.00063 U	0.00052 U	NC
	n-Butylbenzene	0.00079 U	0.00065 U	NC
	n-Propylbenzene	0.00036 U	0.00030 U	NC
	Styrene	0.00032 U	0.00026 U	NC
	tert-Butylbenzene	0.00030 U	0.00024 U	NC
	Tetrachloroethene (PCE)	0.00038 U	0.00032 U	NC
	trans-1,2-DCE	0.00031 U	0.00026 U	NC
	trans-1,3-Dichloropropene	0.00025 U	0.00021 U	NC
	Trichloroethene (TCE)	0.00038 U	0.00032 U	NC
	Trichlorofluoromethane	0.00039 U	0.00032 U	NC
	Vinyl chloride	0.00022 U	0.00018 U	NC
SVOCs (mg/kg-dry):	1,2,4-Trichlorobenzene	0.11459 U	2.81548 U	NC
	1,2-Dichlorobenzene	0.10707 U	2.63077 U	NC
	1,3-Dichlorobenzene	0.09942 U	2.44287 U	NC
	1,4-Dichlorobenzene	0.11708 U	2.87684 U	NC
	1-Methylnaphthalene	0.10376 U	2.54942 U	NC
	2,4,5-Trichlorophenol	0.13045 U	3.20523 U	NC
	2,4,6-Trichlorophenol	0.12941 U	3.17980 U	NC
	2,4-Dichlorophenol	0.11194 U	2.75040 U	NC
	2,4-Dimethylphenol	0.08799 U	2.16194 U	NC
	2,4-Dinitrophenol	0.04651 U	1.14282 U	NC
	2,4-Dinitrotoluene	0.10014 U	2.46060 U	NC
	2,6-Dinitrotoluene	0.12442 U	3.05723 U	NC
	2-Chloronaphthalene	0.11993 U	2.94674 U	NC
	2-Chlorophenol	0.10446 U	2.56672 U	NC
	2-Methylnaphthalene	0.10244 U	2.51697 U	NC
	2-Methylphenol	0.11222 U	2.75733 U	NC
	2-Nitroaniline	0.12737 U	3.12964 U	NC
	2-Nitrophenol	0.10061 U	2.47207 U	NC
	3,3´-Dichlorobenzidine	0.08619 U	2.11789 U	NC
	3+4-Methylphenol	0.11601 U	2.85059 U	NC
	3-Nitroaniline	0.10785 U	2.64997 U	NC
	4,6-Dinitro-2-methylphenol	0.06086 U	1.49551 U	NC
	4-Bromophenyl phenyl ether	0.11876 U	2.91810 U	NC
	4-Chloro-3-methylphenol	0.11145 U	2.73851 U	NC
	4-Chloroaniline	0.10352 U	2.54359 U	NC
	4-Chlorophenyl phenyl ether	0.16668 U	4.09557 U	NC
	4-Nitroaniline	0.10054 U	2.47040 U	NC
	4-Nitrophenol	0.09644 U	2.36972 U	NC
	Acenaphthene	0.13640 U	3.35154 U	NC
	Acenaphthylene	0.11339 U	2.78620 U	NC
	Aniline	0.09743 U	2.39403 U	NC
	Anthracene	0.09508 U	2.33627 U	NC
	Azobenzene	0.12548 U	3.08325 U	NC
	Benz(a)anthracene	0.08798 U	2.16169 U	NC
	Benzo(a)pyrene	0.12562 U	3.08667 U	NC
	Benzo(b)fluoranthene	0.10629 U	2.61175 U	NC
	Benzo(g,h,i)perylene	0.12738 U	3.12986 U	NC
	Benzo(k)fluoranthene	0.12650 U	3.10822 U	NC
	Benzoic acid	0.06378 U	1.56717 U	NC
	Benzyl alcohol	0.09943 U	2.44304 U	NC
	Bis(2-chloroethoxy)methane	0.10684 U	2.62506 U	NC
	Bis(2-chloroethyl)ether	0.11060 U	2.71765 U	NC
	Bis(2-chloroisopropyl)ether	0.08552 U	2.10120 U	NC
	Bis(2-ethylhexyl)phthalate	0.12576 U	3.09000 U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-14 (0-2') Sample Result	SWMU 10 DUP01 Duplicate Result	RPD (%)
	Butyl benzyl phthalate	0.13665 U	3.35771 U	NC
	Carbazole	0.10425 U	2.56160 U	NC
	Chrysene	0.11240 U	2.76177 U	NC
	Dibenz(a,h)anthracene	0.12127 U	2.97976 U	NC
	Dibenzofuran	0.11971 U	2.94148 U	NC
	Diethyl phthalate	0.12704 U	3.12139 U	NC
	Dimethyl phthalate	0.10302 U	2.53119 U	NC
	Di-n-butyl phthalate	0.12659 U	3.11051 U	NC
	Di-n-octyl phthalate	0.12461 U	3.06182 U	NC
	Fluoranthene	0.13583 U	3.33755 U	NC
	Fluorene	0.15239 U	3.74428 U	NC
	Hexachlorobenzene	0.10565 U	2.59588 U	NC
	Hexachlorobutadiene	0.11074 U	2.72107 U	NC
	Hexachlorocyclopentadiene	0.07764 U	1.90769 U	NC
	Hexachloroethane	0.09964 U	2.44821 U	NC
	Indeno(1,2,3-cd)pyrene	0.12721 U	3.12562 U	NC
	Isophorone	0.11934 U	2.93240 U	NC
	Naphthalene	0.10651 U	2.61700 U	NC
	Nitrobenzene	0.11525 U	2.83176 U	NC
	N-Nitrosodi-n-propylamine	0.11603 U	2.85088 U	NC
	N-Nitrosodiphenylamine	0.10022 U	2.46238 U	NC
	Pentachlorophenol	0.06989 U	1.71719 U	NC
	Phenanthrene	0.11710 U	2.87735 U	NC
	Phenol	0.10032 U	2.46489 U	NC
	Pyrene	0.14447 U	3.54968 U	NC
	Pyridine	0.09406 U	2.31115 U	NC
Metals (mg/kg-dry):	Antimony	1.51 U	1.45 U	NC
	Arsenic	1.4 J	2.7 J	15.9
	Barium	460	380	4.8
	Beryllium	0.71	0.59	4.6
	Cadmium	0.03 U	0.03 U	NC
	Chromium	14	16	3.3
	Cobalt	3.8	3.4	2.8
	Cyanide	0.28 U	0.28 U	NC
	Hexavalent Chromium	2.26 U	2.26 U	NC
	Iron	10000	9100	2.4
	Lead	3.8	3.6	1.4
	Manganese	440	490	2.7
	Mercury	0.034 J	0.035 J	0.7
	Nickel	6.5	5.6	3.7
	Selenium	1.76 U	1.69 U	NC
	Silver	0.03 U	0.03 U	NC
	Vanadium	17	21	5.3
	Zinc	29	24	4.7

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/kg-dry = micrograms per kilogram dry
mg/kg-dry = milligrams per kilogram

Table 3A
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-9 (4-6') Sample Result	SWMU 10-9 DUP02 Duplicate Result	RPD (%)
TPH (mg/kg-dry):	Gasoline Range Organics (GRO)	12 J	69	**35.2**
	Diesel Range Organics (DRO)	300	530	13.9
	Motor Oil Range Organics (MRO)	120	170	8.6
VOCs (ug/kg-dry)	1,1,1,2-Tetrachloroethane	0.01186 U	0.02684 U	NC
	1,1,1-Trichloroethane	0.02196 U	0.04971 U	NC
	1,1,2,2-Tetrachloroethane	0.01752 U	0.03967 U	NC
	1,1,2-Trichloroethane	0.01738 U	0.03933 U	NC
	1,1-Dichloroethane	0.05784 U	0.13093 U	NC
	1,1-Dichloroethene	0.00995 U	0.02253 U	NC
	1,1-Dichloropropene	0.02153 U	0.04874 U	NC
	1,2,3-Trichlorobenzene	0.03086 U	0.06986 U	NC
	1,2,3-Trichloropropane	0.02426 U	0.05491 U	NC
	1,2,4-Trichlorobenzene	0.02668 U	0.06040 U	NC
	1,2,4-Trimethylbenzene	0.42	2.8	**37.0**
	1,2-Dibromo-3-chloropropane	0.02484 U	0.05622 U	NC
	1,2-Dibromoethane (EDB)	0.01152 U	0.02607 U	NC
	1,2-Dichlorobenzene	0.00872 U	0.01974 U	NC
	1,2-Dichloroethane (EDC)	0.05784 U	0.13093 U	NC
	1,2-Dichloropropane	0.00808 U	0.01830 U	NC
	1,3,5-Trimethylbenzene	0.12 J	0.82	**37.2**
	1,3-Dichlorobenzene	0.01703 U	0.03854 U	NC
	1,3-Dichloropropane	0.01991 U	0.04508 U	NC
	1,4-Dichlorobenzene	0.01801 U	0.04077 U	NC
	1-Methylnaphthalene	1.1	9.3	**39.4**
	2,2-Dichloropropane	0.02105 U	0.04765 U	NC
	2-Butanone	0.09296 U	0.21044 U	NC
	2-Chlorotoluene	0.01634 U	0.03699 U	NC
	2-Hexanone	0.03556 U	0.08050 U	NC
	2-Methylnaphthalene	1.5	13	**39.7**
	4-Chlorotoluene	0.01093 U	0.02475 U	NC
	4-Isopropyltoluene	0.01028 U	0.21 J	NC
	4-Methyl-2-pentanone	0.02509 U	0.05679 U	NC
	Acetone	0.10782 U	0.24407 U	NC
	Benzene	0.02144 U	0.04854 U	NC
	Bromobenzene	0.01073 U	0.02430 U	NC
	Bromodichloromethane	0.01183 U	0.02677 U	NC
	Bromoform	0.01162 U	0.02632 U	NC
	Bromomethane	0.02791 U	0.06318 U	NC
	Carbon disulfide	0.10405 U	0.23554 U	NC
	Carbon tetrachloride	0.01408 U	0.03188 U	NC
	Chlorobenzene	0.01113 U	0.02519 U	NC
	Chloroethane	0.11192 U	0.25337 U	NC
	Chloroform	0.01507 U	0.03412 U	NC
	Chloromethane	0.01674 U	0.03789 U	NC
	cis-1,2-DCE	0.01829 U	0.04141 U	NC
	cis-1,3-Dichloropropene	0.01003 U	0.02271 U	NC
	Dibromochloromethane	0.01084 U	0.02454 U	NC
	Dibromomethane	0.01522 U	0.03446 U	NC
	Dichlorodifluoromethane	0.03637 U	0.08232 U	NC
	Ethylbenzene	0.04 J	0.34	**39.5**
	Hexachlorobutadiene	0.02008 U	0.04545 U	NC
	Isopropylbenzene	0.016 J	0.16 J	**40.9**
	Methyl tert-butyl ether (MTBE)	0.02045 U	0.04629 U	NC
	Methylene chloride	0.05784 U	0.13093 U	NC
	Naphthalene	0.32	2.5	**38.7**
	n-Butylbenzene	0.065 J	0.4 J	**36.0**

Table 3A
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-9 (4-6') Sample Result	SWMU 10-9 DUP02 Duplicate Result	RPD (%)
	n-Propylbenzene	0.052 J	0.34	**36.7**
	sec-Butylbenzene	0.021 J	0.17 J	**39.0**
	Styrene	0.02654 U	0.06008 U	NC
	tert-Butylbenzene	0.01656 U	0.03749 U	NC
	Tetrachloroethene (PCE)	0.01253 U	0.02836 U	NC
	Toluene	0.01721 U	0.03895 U	NC
	trans-1,2-DCE	0.00940 U	0.02127 U	NC
	trans-1,3-Dichloropropene	0.02603 U	0.05893 U	NC
	Trichloroethene (TCE)	0.01408 U	0.03188 U	NC
	Trichlorofluoromethane	0.04364 U	0.09880 U	NC
	Vinyl chloride	0.05784 U	0.13093 U	NC
	Xylenes, Total	0.26 J	1.9	**38.0**
SVOCs (mg/kg-dry):	1,2,4-Trichlorobenzene	1.01696 U	0.12038 U	NC
	1,2-Dichlorobenzene	0.95024 U	0.11248 U	NC
	1,3-Dichlorobenzene	0.88237 U	0.10445 U	NC
	1,4-Dichlorobenzene	1.03912 U	0.12300 U	NC
	1-Methylnaphthalene	1.1 J	0.7	11.1
	2,4,5-Trichlorophenol	1.15774 U	0.13704 U	NC
	2,4,6-Trichlorophenol	1.14855 U	0.13595 U	NC
	2,4-Dichlorophenol	0.99345 U	0.11760 U	NC
	2,4-Dimethylphenol	0.78090 U	0.09244 U	NC
	2,4-Dinitrophenol	0.41279 U	0.04886 U	NC
	2,4-Dinitrotoluene	0.88877 U	0.10520 U	NC
	2,6-Dinitrotoluene	1.10428 U	0.13071 U	NC
	2-Chloronaphthalene	1.06437 U	0.12599 U	NC
	2-Chlorophenol	0.92710 U	0.10974 U	NC
	2-Methylnaphthalene	1 J	0.89	2.9
	2-Methylphenol	0.99595 U	0.11789 U	NC
	2-Nitroaniline	1.13043 U	0.13381 U	NC
	2-Nitrophenol	0.89292 U	0.10569 U	NC
	3,3´-Dichlorobenzidine	0.76499 U	0.09055 U	NC
	3+4-Methylphenol	1.02964 U	0.12188 U	NC
	3-Nitroaniline	0.95717 U	0.11330 U	NC
	4,6-Dinitro-2-methylphenol	0.54018 U	0.06394 U	NC
	4-Bromophenyl phenyl ether	1.05402 U	0.12477 U	NC
	4-Chloro-3-methylphenol	0.98915 U	0.11709 U	NC
	4-Chloroaniline	0.91875 U	0.10875 U	NC
	4-Chlorophenyl phenyl ether	1.47933 U	0.17511 U	NC
	4-Nitroaniline	0.89231 U	0.10562 U	NC
	4-Nitrophenol	0.85595 U	0.10132 U	NC
	Acenaphthene	1.21058 U	0.14330 U	NC
	Acenaphthylene	1.00638 U	0.11913 U	NC
	Aniline	0.86473 U	0.10236 U	NC
	Anthracene	0.84386 U	0.09989 U	NC
	Azobenzene	1.11368 U	0.13183 U	NC
	Benz(a)anthracene	0.78081 U	0.09242 U	NC
	Benzo(a)pyrene	1.11491 U	0.13197 U	NC
	Benzo(b)fluoranthene	0.94337 U	0.11167 U	NC
	Benzo(g,h,i)perylene	1.13051 U	0.13382 U	NC
	Benzo(k)fluoranthene	1.12270 U	0.13289 U	NC
	Benzoic acid	0.56607 U	0.06701 U	NC
	Benzyl alcohol	0.88243 U	0.10445 U	NC
	Bis(2-chloroethoxy)methane	0.94818 U	0.11224 U	NC
	Bis(2-chloroethyl)ether	0.98162 U	0.11619 U	NC
	Bis(2-chloroisopropyl)ether	0.75896 U	0.08984 U	NC
	Bis(2-ethylhexyl)phthalate	1.11611 U	0.13212 U	NC

Table 3A
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-9 (4-6') Sample Result	SWMU 10-9 DUP02 Duplicate Result	RPD (%)
	Butyl benzyl phthalate	1.21281 U	0.14356 U	NC
	Carbazole	0.92525 U	0.10952 U	NC
	Chrysene	0.99756 U	0.11808 U	NC
	Dibenz(a,h)anthracene	1.07629 U	0.12740 U	NC
	Dibenzofuran	1.06247 U	0.12577 U	NC
	Diethyl phthalate	1.12745 U	0.13346 U	NC
	Dimethyl phthalate	0.91427 U	0.10822 U	NC
	Di-n-butyl phthalate	1.12352 U	0.13299 U	NC
	Di-n-octyl phthalate	1.10594 U	0.13091 U	NC
	Fluoranthene	1.20553 U	0.14270 U	NC
	Fluorene	1.35244 U	0.16009 U	NC
	Hexachlorobenzene	0.93764 U	0.11099 U	NC
	Hexachlorobutadiene	0.98286 U	0.11634 U	NC
	Hexachlorocyclopentadiene	0.68906 U	0.08156 U	NC
	Hexachloroethane	0.88430 U	0.10467 U	NC
	Indeno(1,2,3-cd)pyrene	1.12898 U	0.13364 U	NC
	Isophorone	1.05919 U	0.12538 U	NC
	Naphthalene	0.94527 U	0.33	NC
	Nitrobenzene	1.02284 U	0.12107 U	NC
	N-Nitrosodi-n-propylamine	1.02975 U	0.12189 U	NC
	N-Nitrosodiphenylamine	0.88942 U	0.10528 U	NC
	Pentachlorophenol	0.62025 U	0.07342 U	NC
	Phenanthrene	1.03930 U	0.12302 U	NC
	Phenol	0.89032 U	0.10539 U	NC
	Pyrene	1.28215 U	0.15177 U	NC
	Pyridine	0.83479 U	0.09881 U	NC
Metals (mg/kg-dry):	Antimony	1.56 U	1.54 U	NC
	Arsenic	1.1 J	1.3 J	4.2
	Barium	250	190	6.8
	Beryllium	0.94	0.9	1.1
	Cadmium	0.033002519 U	0.03 U	NC
	Chromium	14	8.5	12.2
	Cobalt	5.3	4.1	6.4
	Cyanide	0.300287306 U	0.30 U	NC
	Hexavalent Chromium	2.40229845 U	2.37 U	NC
	Iron	16000	13000	5.2
	Lead	3.2	3.3	0.8
	Manganese	290	170	13.0
	Mercury	0.0086 J	0.0043 J	16.7
	Nickel	10	7.4	7.5
	Selenium	1.820599379 U	1.80 U	NC
	Silver	0.035376801 U	0.03 U	NC
	Vanadium	19	19	0.0
	Zinc	32	49	10.5

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/kg-dry = micrograms per kilogram dry
mg/kg-dry = milligrams per kilogram
bold value = Field Duplicate RPD Outlier

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-6 (10-12') Sample Result	SWMU 10 DUP03 Field Duplicate	RPD (%)
TPH (mg/kg-dry):	Gasoline Range Organics (GRO)	1.22 U	1.16 U	NC
	Diesel Range Organics (DRO)	5.32 U	5.44 U	NC
	Motor Oil Range Organics (MRO)	48.08 U	49.16 U	NC
VOCs (ug/kg-dry)	1,1,1,2-Tetrachloroethane	0.000407 U	0.000378 U	NC
	1,1,1-Trichloroethane	0.000356 U	0.000331 U	NC
	1,1,2,2-Tetrachloroethane	0.000550 U	0.000511 U	NC
	1,1,2-Trichloroethane	0.002501 U	0.002325 U	NC
	1,1-Dichloroethane	0.000584 U	0.000543 U	NC
	1,1-Dichloroethene	0.000417 U	0.000388 U	NC
	1,1-Dichloropropene	0.000458 U	0.000426 U	NC
	1,2,3-Trichlorobenzene	0.000915 U	0.000851 U	NC
	1,2,3-Trichloropropane	0.000878 U	0.000816 U	NC
	1,2,4-Trichlorobenzene	0.000937 U	0.000871 U	NC
	1,2,4-Trimethylbenzene	0.00363	0.00292	5.4
	1,2-Dibromo-3-chloropropane	0.000735 U	0.000683 U	NC
	1,2-Dibromoethane (EDB)	0.000299 U	0.000278 U	NC
	1,2-Dichlorobenzene	0.000555 U	0.000516 U	NC
	1,2-Dichloroethane (EDC)	0.000670 U	0.000623 U	NC
	1,2-Dichloropropane	0.000534 U	0.000497 U	NC
	1,3,5-Trimethylbenzene	0.0022 J	0.00172 J	6.1
	1,3-Dichlorobenzene	0.000424 U	0.000394 U	NC
	1,3-Dichloropropane	0.000390 U	0.000362 U	NC
	1,4-Dichlorobenzene	0.000393 U	0.000365 U	NC
	1-Methylnaphthalene	0.000982 U	0.000913 U	NC
	2,2-Dichloropropane	0.000434 U	0.000404 U	NC
	2-Butanone	0.000801 U	0.000745 U	NC
	2-Chlorotoluene	0.000488 U	0.000454 U	NC
	2-Hexanone	0.000520 U	0.000484 U	NC
	2-Methylnaphthalene	0.000977 U	0.000909 U	NC
	4-Chlorotoluene	0.000482 U	0.000448 U	NC
	4-Isopropyltoluene	0.000971 U	0.000902 U	NC
	4-Methyl-2-pentanone	0.001056 U	0.000982 U	NC
	Acetone	0.00589 J	0.00256 J	19.7
	Benzene	0.0226	0.0206	2.3
	Bromobenzene	0.000696 U	0.000647 U	NC
	Bromodichloromethane	0.000338 U	0.000314 U	NC
	Bromoform	0.000648 U	0.000603 U	NC
	Bromomethane	0.001479 U	0.001375 U	NC
	Carbon disulfide	0.001132 U	0.001052 U	NC
	Carbon tetrachloride	0.000453 U	0.000421 U	NC
	Chlorobenzene	0.000254 U	0.000236 U	NC
	Chloroethane	0.002501 U	0.002325 U	NC
	Chloroform	0.000515 U	0.000479 U	NC
	Chloromethane	0.000295 U	0.000274 U	NC
	cis-1,2-DCE	0.000661 U	0.000615 U	NC
	cis-1,3-Dichloropropene	0.002501 U	0.002325 U	NC
	Dibromochloromethane	0.000281 U	0.000261 U	NC
	Dibromomethane	0.001419 U	0.001320 U	NC
	Dichlorodifluoromethane	0.001021 U	0.000949 U	NC
	Ethylbenzene	0.0035	0.00328	1.6
	Hexachlorobutadiene	0.000505 U	0.000469 U	NC
	Isopropylbenzene	0.000580 U	0.000539 U	NC
	Methyl tert-butyl ether (MTBE)	0.001049 U	0.000975 U	NC
	Methylene chloride	0.000618 U	0.000721 J	NC
	Naphthalene	0.00103 J	0.000837 J	5.2
	n-Butylbenzene	0.001027 U	0.000955 U	NC
	n-Propylbenzene	0.000638 J	0.000477 J	7.2

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-6 (10-12') Sample Result	SWMU 10 DUP03 Field Duplicate	RPD (%)
	sec-Butylbenzene	0.000925 J	0.000849 J	2.1
	Styrene	0.000414 U	0.000385 U	NC
	tert-Butylbenzene	0.000383 U	0.000356 U	NC
	Tetrachloroethene (PCE)	0.000496 U	0.000461 U	NC
	Toluene	0.0146	0.0139	1.2
	trans-1,2-DCE	0.000404 U	0.000376 U	NC
	trans-1,3-Dichloropropene	0.000327 U	0.000304 U	NC
	Trichloroethene (TCE)	0.000497 U	0.000462 U	NC
	Trichlorofluoromethane	0.000505 U	0.000470 U	NC
	Vinyl chloride	0.000286 U	0.000266 U	NC
	Xylenes, Total	0.0116	0.00984	4.1
SVOCs (mg/kg-dry):	1,2,4-Trichlorobenzene	0.120870 U	0.112566 U	NC
	1,2-Dichlorobenzene	0.112940 U	0.105182 U	NC
	1,3-Dichlorobenzene	0.104874 U	0.097669 U	NC
	1,4-Dichlorobenzene	0.123504 U	0.115020 U	NC
	1-Methylnaphthalene	0.109448 U	0.101929 U	NC
	2,4,5-Trichlorophenol	0.137603 U	0.128149 U	NC
	2,4,6-Trichlorophenol	0.136511 U	0.127132 U	NC
	2,4-Dichlorophenol	0.118076 U	0.109965 U	NC
	2,4-Dimethylphenol	0.092814 U	0.086437 U	NC
	2,4-Dinitrophenol	0.049062 U	0.045692 U	NC
	2,4-Dinitrotoluene	0.105635 U	0.098378 U	NC
	2,6-Dinitrotoluene	0.131249 U	0.122232 U	NC
	2-Chloronaphthalene	0.126505 U	0.117815 U	NC
	2-Chlorophenol	0.110191 U	0.102621 U	NC
	2-Methylnaphthalene	0.108055 U	0.100632 U	NC
	2-Methylphenol	0.118374 U	0.110242 U	NC
	2-Nitroaniline	0.134357 U	0.125127 U	NC
	2-Nitrophenol	0.106127 U	0.098836 U	NC
	3,3´-Dichlorobenzidine	0.090922 U	0.084676 U	NC
	3+4-Methylphenol	0.122378 U	0.113970 U	NC
	3-Nitroaniline	0.113765 U	0.105949 U	NC
	4,6-Dinitro-2-methylphenol	0.064203 U	0.059792 U	NC
	4-Bromophenyl phenyl ether	0.125276 U	0.116669 U	NC
	4-Chloro-3-methylphenol	0.117566 U	0.109489 U	NC
	4-Chloroaniline	0.109198 U	0.101696 U	NC
	4-Chlorophenyl phenyl ether	0.175825 U	0.163746 U	NC
	4-Nitroaniline	0.106056 U	0.098770 U	NC
	4-Nitrophenol	0.101733 U	0.094744 U	NC
	Acenaphthene	0.143884 U	0.133999 U	NC
	Acenaphthylene	0.119613 U	0.111396 U	NC
	Aniline	0.102777 U	0.095717 U	NC
	Anthracene	0.100297 U	0.093407 U	NC
	Azobenzene	0.132366 U	0.123272 U	NC
	Benz(a)anthracene	0.092803 U	0.086427 U	NC
	Benzo(a)pyrene	0.132513 U	0.123409 U	NC
	Benzo(b)fluoranthene	0.112124 U	0.104421 U	NC
	Benzo(g,h,i)perylene	0.134367 U	0.125136 U	NC
	Benzo(k)fluoranthene	0.133438 U	0.124271 U	NC
	Benzoic acid	0.067280 U	0.062658 U	NC
	Benzyl alcohol	0.104881 U	0.097676 U	NC
	Bis(2-chloroethoxy)methane	0.112695 U	0.104953 U	NC
	Bis(2-chloroethyl)ether	0.116670 U	0.108655 U	NC
	Bis(2-chloroisopropyl)ether	0.090206 U	0.084009 U	NC
	Bis(2-ethylhexyl)phthalate	0.132656 U	0.123542 U	NC
	Butyl benzyl phthalate	0.144149 U	0.134246 U	NC
	Carbazole	0.109971 U	0.102416 U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-6 (10-12') Sample Result	SWMU 10 DUP03 Field Duplicate	RPD (%)
	Chrysene	0.118564 U	0.110419 U	NC
	Dibenz(a,h)anthracene	0.127923 U	0.119135 U	NC
	Dibenzofuran	0.126280 U	0.117604 U	NC
	Diethyl phthalate	0.134003 U	0.124797 U	NC
	Dimethyl phthalate	0.108666 U	0.101200 U	NC
	Di-n-butyl phthalate	0.133536 U	0.124362 U	NC
	Di-n-octyl phthalate	0.131446 U	0.122416 U	NC
	Fluoranthene	0.143283 U	0.133440 U	NC
	Fluorene	0.160744 U	0.149701 U	NC
	Hexachlorobenzene	0.111443 U	0.103787 U	NC
	Hexachlorobutadiene	0.116817 U	0.108792 U	NC
	Hexachlorocyclopentadiene	0.081898 U	0.076272 U	NC
	Hexachloroethane	0.105103 U	0.097883 U	NC
	Indeno(1,2,3-cd)pyrene	0.134185 U	0.124967 U	NC
	Isophorone	0.125890 U	0.117241 U	NC
	Naphthalene	0.112350 U	0.104631 U	NC
	Nitrobenzene	0.121569 U	0.113217 U	NC
	N-Nitrosodi-n-propylamine	0.122390 U	0.113982 U	NC
	N-Nitrosodiphenylamine	0.105712 U	0.098449 U	NC
	Pentachlorophenol	0.073720 U	0.068656 U	NC
	Phenanthrene	0.123526 U	0.115040 U	NC
	Phenol	0.105819 U	0.098549 U	NC
	Pyrene	0.152390 U	0.141921 U	NC
	Pyridine	0.099219 U	0.092403 U	NC
Metals (mg/kg-dry):	Antimony	1.9 J	1.9 J	0.0
	Arsenic	2.1 J	2.2 J	1.2
	Barium	550	450	5.0
	Beryllium	1	0.95	1.3
	Cadmium	0.033 U	0.03 U	NC
	Chromium	14	13	1.9
	Cobalt	8	7	3.3
	Cyanide	0.296 U	0.28 U	NC
	Hexavalent Chromium	2.368 U	260	NC
	Iron	20000	20000	0.0
	Lead	1.6	1.4	3.3
	Manganese	760	730	1.0
	Mercury	0.0035 U	0.0031 U	NC
	Nickel	16	13	5.2
	Selenium	1.821 U	1.69 U	NC
	Silver	0.035 U	0.03 U	NC
	Vanadium	14	17	4.8
	Zinc	23	21	2.3

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/kg-dry = micrograms per kilogram dry
mg/kg-dry = milligrams per kilogram
bold value = Field Duplicate RPD Outlier

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 14-3 (0.5-2.0') Sample Result	SWMU 14-3 DUP01 Field Duplicate	RPD (%)
TPH (mg/kg-dry):	Gasoline Range Organics (GRO)	1300	1100	4.2
	Diesel Range Organics (DRO)	7800	3000	22.2
	Motor Oil Range Organics (MRO)	ND U	ND U	NC
VOCs (ug/kg-dry)	1,1,1,2-Tetrachloroethane	ND U	ND U	NC
	1,1,1-Trichloroethane	ND U	ND U	NC
	1,1,2,2-Tetrachloroethane	ND U	ND U	NC
	1,1,2-Trichloroethane	ND U	ND U	NC
	1,1-Dichloroethane	ND U	ND U	NC
	1,1-Dichloroethene	ND U	ND U	NC
	1,1-Dichloropropene	ND U	ND U	NC
	1,2,3-Trichlorobenzene	ND U	ND U	NC
	1,2,3-Trichloropropane	ND U	ND U	NC
	1,2,4-Trichlorobenzene	ND U	ND U	NC
	1,2,4-Trimethylbenzene	27	17	11.4
	1,2-Dibromo-3-chloropropane	ND U	ND U	NC
	1,2-Dibromoethane (EDB)	ND U	ND U	NC
	1,2-Dichlorobenzene	ND U	ND U	NC
	1,2-Dichloroethane (EDC)	ND U	ND U	NC
	1,2-Dichloropropane	ND U	ND U	NC
	1,3,5-Trimethylbenzene	10	6.2	11.7
	1,3-Dichlorobenzene	ND U	ND U	NC
	1,3-Dichloropropane	ND U	ND U	NC
	1,4-Dichlorobenzene	ND U	ND U	NC
	1-Methylnaphthalene	48	31	10.8
	2,2-Dichloropropane	ND U	ND U	NC
	2-Butanone	ND U	ND U	NC
	2-Chlorotoluene	ND U	ND U	NC
	2-Hexanone	ND U	ND U	NC
	2-Methylnaphthalene	87	60	9.2
	4-Chlorotoluene	ND U	ND U	NC
	4-Isopropyltoluene	1.6	1.1	9.3
	4-Methyl-2-pentanone	ND U	ND U	NC
	Acetone	ND U	ND U	NC
	Benzene	1.9	1.2	11.3
	Bromobenzene	ND U	ND U	NC
	Bromodichloromethane	ND U	ND U	NC
	Bromoform	ND U	ND U	NC
	Bromomethane	ND U	ND U	NC
	Carbon disulfide	ND U	ND U	NC
	Carbon tetrachloride	ND U	ND U	NC
	Chlorobenzene	ND U	ND U	NC
	Chloroethane	ND U	ND U	NC
	Chloroform	ND U	ND U	NC
	Chloromethane	ND U	ND U	NC
	cis-1,2-DCE	ND U	ND U	NC
	cis-1,3-Dichloropropene	ND U	ND U	NC
	Dibromochloromethane	ND U	ND U	NC
	Dibromomethane	ND U	ND U	NC
	Dichlorodifluoromethane	ND U	ND U	NC
	Ethylbenzene	11	8.3	7.0
	Hexachlorobutadiene	ND U	ND U	NC
	Isopropylbenzene	3.1	2.3	7.4
	Methyl tert-butyl ether (MTBE)	ND U	ND U	NC
	Methylene chloride	ND U	ND U	NC
	Naphthalene	20	13	10.6
	n-Butylbenzene	2.8	1.9 J	9.6
	n-Propylbenzene	5.2	3.3	11.2

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 14-3 (0.5-2.0') Sample Result	SWMU 14-3 DUP01 Field Duplicate	RPD (%)
	sec-Butylbenzene	1.8	1	14.3
	Styrene	ND U	ND U	NC
	tert-Butylbenzene	ND U	ND U	NC
	Tetrachloroethene (PCE)	ND U	ND U	NC
	Toluene	34	23	9.6
	trans-1,2-DCE	ND U	ND U	NC
	trans-1,3-Dichloropropene	ND U	ND U	NC
	Trichloroethene (TCE)	ND U	ND U	NC
	Trichlorofluoromethane	ND U	ND U	NC
	Vinyl chloride	ND U	ND U	NC
	Xylenes, Total	86	65	7.0
SVOCs (mg/kg-dry):	1,2,4-Trichlorobenzene	ND U	ND U	NC
	1,2-Dichlorobenzene	ND U	ND U	NC
	1,3-Dichlorobenzene	ND U	ND U	NC
	1,4-Dichlorobenzene	ND U	ND U	NC
	1-Methylnaphthalene	76	28	23.1
	2,4,5-Trichlorophenol	ND U	ND U	NC
	2,4,6-Trichlorophenol	ND U	ND U	NC
	2,4-Dichlorophenol	ND U	ND U	NC
	2,4-Dimethylphenol	36	18	16.7
	2,4-Dinitrophenol	ND U	ND U	NC
	2,4-Dinitrotoluene	ND U	ND U	NC
	2,6-Dinitrotoluene	ND U	ND U	NC
	2-Chloronaphthalene	ND U	ND U	NC
	2-Chlorophenol	ND U	ND U	NC
	2-Methylnaphthalene	130	45	24.3
	2-Methylphenol	56	29	15.9
	2-Nitroaniline	ND U	ND U	NC
	2-Nitrophenol	ND U	ND U	NC
	3,3´-Dichlorobenzidine	ND U	ND U	NC
	3+4-Methylphenol	100	60	12.5
	3-Nitroaniline	ND U	ND U	NC
	4,6-Dinitro-2-methylphenol	ND U	ND U	NC
	4-Bromophenyl phenyl ether	ND U	ND U	NC
	4-Chloro-3-methylphenol	ND U	ND U	NC
	4-Chloroaniline	ND U	ND U	NC
	4-Chlorophenyl phenyl ether	ND U	ND U	NC
	4-Nitroaniline	ND U	ND U	NC
	4-Nitrophenol	ND U	ND U	NC
	Acenaphthene	ND U	ND U	NC
	Acenaphthylene	ND U	ND U	NC
	Aniline	ND U	ND U	NC
	Anthracene	ND U	ND U	NC
	Azobenzene	ND U	ND U	NC
	Benz(a)anthracene	ND U	ND U	NC
	Benzo(a)pyrene	ND U	ND U	NC
	Benzo(b)fluoranthene	ND U	ND U	NC
	Benzo(g,h,i)perylene	ND U	ND U	NC
	Benzo(k)fluoranthene	ND U	ND U	NC
	Benzoic acid	ND U	ND U	NC
	Benzyl alcohol	ND U	ND U	NC
	Bis(2-chloroethoxy)methane	ND U	ND U	NC
	Bis(2-chloroethyl)ether	ND U	ND U	NC
	Bis(2-chloroisopropyl)ether	ND U	ND U	NC
	Bis(2-ethylhexyl)phthalate	ND U	ND U	NC
	Butyl benzyl phthalate	ND U	ND U	NC
	Carbazole	ND U	ND U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 14-3 (0.5-2.0') Sample Result	SWMU 14-3 DUP01 Field Duplicate	RPD (%)
	Chrysene	ND U	ND U	NC
	Dibenz(a,h)anthracene	ND U	ND U	NC
	Dibenzofuran	ND U	ND U	NC
	Diethyl phthalate	ND U	ND U	NC
	Dimethyl phthalate	ND U	ND U	NC
	Di-n-butyl phthalate	ND U	ND U	NC
	Di-n-octyl phthalate	ND U	ND U	NC
	Fluoranthene	ND U	ND U	NC
	Fluorene	7.1	3.2	18.9
	Hexachlorobenzene	ND U	ND U	NC
	Hexachlorobutadiene	ND U	ND U	NC
	Hexachlorocyclopentadiene	ND U	ND U	NC
	Hexachloroethane	ND U	ND U	NC
	Indeno(1,2,3-cd)pyrene	ND U	ND U	NC
	Isophorone	ND U	ND U	NC
	Naphthalene	24	8.8	23.2
	Nitrobenzene	ND U	ND U	NC
	N-Nitrosodi-n-propylamine	ND U	ND U	NC
	N-Nitrosodiphenylamine	ND U	ND U	NC
	Pentachlorophenol	ND U	ND U	NC
	Phenanthrene	15	6	21.4
	Phenol	52	26	16.7
	Pyrene	ND U	ND U	NC
	Pyridine	ND U	ND U	NC
Metals (mg/kg-dry):	Antimony	ND U	ND U	NC
	Arsenic	1.5 J	1.1 J	7.7
	Barium	200	160	5.6
	Beryllium	1	1.1	2.4
	Cadmium	ND U	ND U	NC
	Chromium	11	11	0.0
	Cobalt	5.3	5.4	0.5
	Cyanide	ND U	ND U	NC
	Hexavalent Chromium	ND U	ND U	NC
	Iron	16000	16000	0.0
	Lead	4.4	5.3	4.6
	Manganese	210	200	1.2
	Mercury	ND U	ND U	NC
	Nickel	9.6	9.5	0.3
	Selenium	ND U	ND U	NC
	Silver	ND U	ND U	NC
	Vanadium	19	19	0.0
	Zinc	17	17	0.0

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/kg-dry = micrograms per kilogram dry
mg/kg-dry = milligrams per kilogram
bold value = Field Duplicate RPD Outlier

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-15-GW Sample Result	SWMU 10 DUP01GW Field Duplicate	RPD (%)
TPH (mg/l):	Gasoline Range Organics (GRO)	0.78	0.73	1.7
	Diesel Range Organics (DRO)	1	1.1	2.4
	Motor Oil Range Organics (MRO)	5 U	5 U	NC
VOCs (ug/l)	1,1,1,2-Tetrachloroethane	0.22094 U	0.11047 U	NC
	1,1,1-Trichloroethane	0.15544 U	0.07772 U	NC
	1,1,2,2-Tetrachloroethane	0.35915 U	0.17957 U	NC
	1,1,2-Trichloroethane	0.15763 U	0.07881 U	NC
	1,1-Dichloroethane	0.8 U	0.4 U	NC
	1,1-Dichloroethene	0.19865 U	0.09932 U	NC
	1,1-Dichloropropene	0.23043 U	0.11521 U	NC
	1,2,3-Trichlorobenzene	0.53278 U	0.26639 U	NC
	1,2,3-Trichloropropane	0.31673 U	0.15836 U	NC
	1,2,4-Trichlorobenzene	0.56547 U	0.28273 U	NC
	1,2,4-Trimethylbenzene	0.31893 U	0.15946 U	NC
	1,2-Dibromo-3-chloropropane	0.27209 U	0.13604 U	NC
	1,2-Dibromoethane (EDB)	0.26750 U	0.13375 U	NC
	1,2-Dichlorobenzene	0.23661 U	0.11831 U	NC
	1,2-Dichloroethane (EDC)	0.35297 U	0.17648 U	NC
	1,2-Dichloropropane	0.30239 U	0.15119 U	NC
	1,3,5-Trimethylbenzene	0.24576 U	0.12288 U	NC
	1,3-Dichlorobenzene	0.18698 U	0.09349 U	NC
	1,3-Dichloropropane	0.34440 U	0.17220 U	NC
	1,4-Dichlorobenzene	0.33168 U	0.16584 U	NC
	1-Methylnaphthalene	1.07678 U	0.53839 U	NC
	2,2-Dichloropropane	0.30330 U	0.15165 U	NC
	Benzene	0.51 J	0.4 J	6.0
	2-Butanone	2.9 J	2.9 J	0.0
	2-Chlorotoluene	0.15813 U	0.07906 U	NC
	2-Hexanone	0.95322 U	0.47661 U	NC
	2-Methylnaphthalene	1.18893 U	0.59446 U	NC
	4-Chlorotoluene	0.29868 U	0.14934 U	NC
	4-Isopropyltoluene	0.37722 U	0.18861 U	NC
	4-Methyl-2-pentanone	0.51323 U	0.25661 U	NC
	Acetone	9.7 J	16	12.3
	Bromobenzene	0.21555 U	0.10777 U	NC
	Bromodichloromethane	0.17935 U	0.08968 U	NC
	Bromoform	0.32470 U	0.16235 U	NC
	Bromomethane	2.32245 U	1.16123 U	NC
	Carbon disulfide	1.34646 U	0.67323 U	NC
	Carbon Tetrachloride	0.15607 U	0.07803 U	NC
	Chlorobenzene	0.18680 U	0.09340 U	NC
	Chloroethane	0.20937 U	0.10468 U	NC
	Chloroform	0.42972 U	0.21486 U	NC
	Chloromethane	0.34737 U	0.17368 U	NC
	cis-1,2-DCE	0.16120 U	0.08060 U	NC
	cis-1,3-Dichloropropene	0.26617 U	0.13308 U	NC
	Dibromochloromethane	0.19361 U	0.09681 U	NC
	Dibromomethane	0.46872 U	0.23436 U	NC
	Dichlorodifluoromethane	1.38481 U	0.69241 U	NC
	Ethylbenzene	0.20214 U	0.10107 U	NC
	Hexachlorobutadiene	0.50280 U	0.25140 U	NC
	Isopropylbenzene	0.30395 U	0.15197 U	NC
	Methyl tert-butyl ether (MTBE)	150	150	0.0
	Methylene Chloride	0.72072 U	0.36036 U	NC
	Naphthalene	0.43587 U	0.21793 U	NC
	n-Butylbenzene	0.49093 U	0.24546 U	NC
	n-Propylbenzene	0.32634 U	0.16317 U	NC
	sec-Butylbenzene	0.45720 U	0.22860 U	NC
	Styrene	0.21131 U	0.10566 U	NC
	tert-Butylbenzene	0.25893 U	0.12947 U	NC
	Tetrachloroethene (PCE)	0.32095 U	0.16047 U	NC
	Toluene	0.21693 U	0.10847 U	NC
	trans-1,2-DCE	0.18810 U	0.09405 U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-15-GW Sample Result		SWMU 10 DUP01GW Field Duplicate		RPD (%)
	trans-1,3-Dichloropropene	0.22617	U	0.11309	U	NC
	Trichloroethene (TCE)	0.32669	U	0.16334	U	NC
	Trichlorofluoromethane	0.25403	U	0.12701	U	NC
	Vinyl chloride	0.25082	U	0.12541	U	NC
	Xylenes, Total	0.56497	U	0.28248	U	NC
SVOCs (mg/kg-dry):	1,2,4-Trichlorobenzene	1.99336	U	1.99336	U	NC
	1,2-Dichlorobenzene	1.89877	U	1.89877	U	NC
	1,3-Dichlorobenzene	1.69038	U	1.69038	U	NC
	1,4-Dichlorobenzene	1.23419	U	1.23419	U	NC
	1-Methylnaphthalene	1.80147	U	1.80147	U	NC
	2,4,5-Trichlorophenol	1.61671	U	1.61671	U	NC
	2,4,6-Trichlorophenol	1.25834	U	1.25834	U	NC
	2,4-Dichlorophenol	1.39496	U	1.39496	U	NC
	2,4-Dimethylphenol	1.85381	U	1.85381	U	NC
	2,4-Dinitrophenol	1.06974	U	1.06974	U	NC
	2,4-Dinitrotoluene	1.43393	U	1.43393	U	NC
	2,6-Dinitrotoluene	1.49035	U	1.49035	U	NC
	2-Chloronaphthalene	1.71573	U	1.71573	U	NC
	2-Chlorophenol	1.20402	U	1.20402	U	NC
	2-Methylnaphthalene	2.24599	U	2.24599	U	NC
	2-Methylphenol	1.24572	U	1.24572	U	NC
	2-Nitroaniline	1.79467	U	1.79467	U	NC
	2-Nitrophenol	1.23136	U	1.23136	U	NC
	3,3´-Dichlorobenzidine	2.60844	U	2.60844	U	NC
	3+4-Methylphenol	1.47532	U	1.47532	U	NC
	3-Nitroaniline	1.47977	U	1.47977	U	NC
	4,6-Dinitro-2-methylphenol	1.36786	U	1.36786	U	NC
	4-Bromophenyl phenyl ether	1.40872	U	1.40872	U	NC
	4-Chloro-3-methylphenol	1.35070	U	1.35070	U	NC
	4-Chloroaniline	1.87394	U	1.87394	U	NC
	4-Chlorophenyl phenyl ether	2.01318	U	2.01318	U	NC
	4-Nitroaniline	1.24171	U	1.24171	U	NC
	4-Nitrophenol	1.40498	U	1.40498	U	NC
	Acenaphthene	1.88470	U	1.88470	U	NC
	Acenaphthylene	1.86589	U	1.86589	U	NC
	Aniline	1.54599	U	1.54599	U	NC
	Anthracene	1.60486	U	1.60486	U	NC
	Azobenzene	2.00531	U	2.00531	U	NC
	Benz(a)anthracene	2.50627	U	2.50627	U	NC
	Benzo(a)pyrene	2.72398	U	2.72398	U	NC
	Benzo(b)fluoranthene	2.40284	U	2.40284	U	NC
	Benzo(g,h,i)perylene	3.12517	U	3.12517	U	NC
	Benzo(k)fluoranthene	2.51488	U	2.51488	U	NC
	Benzoic acid	1.02557	U	1.02557	U	NC
	Benzyl alcohol	1.17187	U	1.17187	U	NC
	Bis(2-chloroethoxy)methane	1.80486	U	1.80486	U	NC
	Bis(2-chloroethyl)ether	1.77363	U	1.77363	U	NC
	Bis(2-chloroisopropyl)ether	2.05946	U	2.05946	U	NC
	Bis(2-ethylhexyl)phthalate	3.32558	U	3.32558	U	NC
	Butyl benzyl phthalate	2.37012	U	2.37012	U	NC
	Carbazole	1.49023	U	1.49023	U	NC
	Chrysene	2.15442	U	2.15442	U	NC
	Dibenz(a,h)anthracene	3.26832	U	3.26832	U	NC
	Dibenzofuran	1.90194	U	1.90194	U	NC
	Diethyl phthalate	1.67338	U	1.67338	U	NC
	Dimethyl phthalate	1.99487	U	1.99487	U	NC
	Di-n-butyl phthalate	2.10312	U	2.10312	U	NC
	Di-n-octyl phthalate	1.93926	U	1.93926	U	NC
	Fluoranthene	1.47557	U	1.47557	U	NC
	Fluorene	1.67191	U	1.67191	U	NC
	Hexachlorobenzene	2.02231	U	2.02231	U	NC
	Hexachlorobutadiene	1.94908	U	1.94908	U	NC
	Hexachlorocyclopentadiene	1.47091	U	1.47091	U	NC

Table A-3
Field Duplicate Summary
SWMU 10 Investigation Report
Western Refining Southwest, Inc. - Gallup Refinery

	Parameter	SWMU 10-15-GW Sample Result		SWMU 10 DUP01GW Field Duplicate		RPD (%)
	Hexachloroethane	1.61223	U	1.61223	U	NC
	Indeno(1,2,3-cd)pyrene	2.45952	U	2.45952	U	NC
	Isophorone	1.95246	U	1.95246	U	NC
	Naphthalene	1.83350	U	1.83350	U	NC
	Nitrobenzene	1.49388	U	1.49388	U	NC
	N-Nitrosodimethylamine	1.41684	U	1.41684	U	NC
	N-Nitrosodi-n-propylamine	2.03650	U	2.03650	U	NC
	N-Nitrosodiphenylamine	2.46700	U	2.46700	U	NC
	Pentachlorophenol	1.13741	U	1.13741	U	NC
	Phenanthrene	1.99666	U	1.99666	U	NC
	Phenol	1.08528	U	1.08528	U	NC
	Pyrene	2.31812	U	2.31812	U	NC
	Pyridine	1.67388	U	1.67388	U	NC
Water Quality (mg/l)	Chloride	2300		2400		1.1
	Fluoride	0.55		0.55		0.0
	Sulfate	440		470		1.6
Dissolved Metals (mg/l):	Antimony (d)	0.001429741	U	0.001	U	NC
	Arsenic (d)	0.011	J	0.011	J	0.0
	Barium (d)	0.22		0.22		0.0
	Beryllium (d)	0.000312692	U	0.00033	J	NC
	Cadmium (d)	0.000966229	U	0.001	U	NC
	Chromium (d)	0.0094		0.0094		0.0
	Cobalt (d)	0.023		0.023		0.0
	Iron (d)	0.61		2.2		28.3
	Lead (d)	0.0026	J	0.0039	J	10.0
	Manganese (d)	2.4		2.5		1.0
	Nickel (d)	0.65		0.66		0.4
	Selenium (d)	0.02		0.023		3.5
	Silver (d)	0.00121688	U	0.001	U	NC
	Vanadium (d)	0.0057	J	0.0076	J	7.1
	Zinc	0.15		0.036		**30.6**
Total Metals (mg/l):	Antimony	0.00215761	U	0.002	U	NC
	Arsenic	0.012		0.012		0.0
	Barium	0.37		0.31		4.4
	Beryllium	0.0015	J	0.0014	J	1.7
	Cadmium	0.000966229	U	0.001	U	NC
	Chromium	0.0062		0.0059	J	1.2
	Chromium, Hexavalent	0.0005	U	0.00061		NC
	Cobalt	0.025		0.025		0.0
	Cyanide	0.055		0.051		1.9
	Iron	9.4		7.4		6.0
	Lead	0.014		0.012		3.8
	Manganese	2.9		3		0.8
	Mercury	0.0000589	U	0.0000589	U	NC
	Nickel	0.64		0.65		0.4
	Selenium	0.019		0.022		3.7
	Silver	0.002112456	U	0.002	U	NC
	Vanadium	0.019	J	0.017	J	2.8

Notes:
RPD = Relative percent difference; [(difference)/(average)]* 100
NC = Not calculated; RPD values were not calculated for non-detects
ug/l = micrograms per liter
mg/l = milligrams per liter
bold value = Field Duplicate RPD Outlier

Table A-4
Completeness Summary - Soil
Group 9 Investigation Report
Western Refining Southwest, Inc. - Bloomfield Refinery

	Parameter	Total Number of Results	Number of Usable Results	Percent Technical Compliance
TPH :	Diesel Range Organics (DRO)	67	67	100
	Motor Oil Range Organics (MRO)	67	67	100
	Gasoline Range Organics (GRO)	67	67	100
VOCs:	All VOC Analytes	76	76	100
SVOCs:	All SVOC Analytes	67	67	100
Metals (total):	Antimony	67	67	100
	Arsenic	67	67	100
	Barium	67	67	100
	Beryllium	67	67	100
	Cadmium	67	67	100
	Chromium	67	67	100
	Cobalt	67	67	100
	Cyanide	67	67	100
	Hexavalent Chromium	67	67	100
	Iron	67	67	100
	Lead	67	67	100
	Manganese	67	67	100
	Mercury	67	67	100
	Nickel	67	67	100
	Selenium	67	67	100
	Silver	67	67	100
	Vanadium	67	67	100
	Zinc	67	67	100
Metals (mg/l dissolved):	Antimony	15	15	100
	Arsenic	15	15	100
	Barium	15	15	100
	Beryllium	15	15	100
	Cadmium	15	15	100
	Chromium	15	15	100
	Cobalt	15	15	100
	Iron	15	15	100
	Lead	15	15	100
	Manganese	15	15	100
	Nickel	15	15	100
	Selenium	15	15	100
	Silver	15	15	100
	Vanadium	15	15	100
	Zinc	15	15	100
Water Quality (mg/l)	Chloride	15	15	100
	Fluoride	15	15	100
	Sulfate	15	15	100

Notes:
Number of samples used in completeness calculations includes soil samples, groundwater samples, soil and groundwater field duplicates, equipment rinsate, and field blanks.
Percent Technial Compliance = (Number of usable results / Number of reported results) * 100

Appendix F

Historical Analyses

TABLE 2

Ciniza Refinery Metals Results for Wastewater samples
Taken During July and August,1980.

Metal	New Well Raw Water 7/23/80 0830 hrs.	Pond 3 Inlet /Softener Waste 8/11/80 1000 hrs.	Cooling Water Tower Blowdown 7/23/80 0830 hrs.	API Separator Overflow 7/17/80 1330 hrs.	API Sepatrator Overflow 7/19/80 1300 hrs.	API Separator Overflow 7/23/80 0830 hrs.
Arsenic	0.003	0.031	0.013	0.004	0.005	0.015
Barium	0.014	0.068	0.022	0.22	0.094	0.105
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	<0.001	0.026	13.	0.91	0.64	1.2
Lead	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
Selenium	<0.001	0.097	0.025	0.015	0.018	0.024
Silver	<0.001	0.002	0.010	0.006	0.012	0.005

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REPORT OF ANALYSIS

LAB # 84-03-404

LE IDENTIFICATION	DATE COLLECTED	TYPE OF ANALYSIS	mg/liter	
Seperator Sludge	03/13/84	Silver	<0.01	
		Arsenic	<0.01	
		Barium	0.4	
		Cadmium	<0.001	
		Chromium	0.036	
		Chromium, Hexavalent	<0.01	
		Chromium	10	(ug/gram)
		Mercury	<0.0004	
		Oil and Grease	26,000	(ug/gram)
		Lead	<0.001	
		Lead	340	(ug/gram)
		pH	9.30	(units)
		Selenium	<0.01	
		Total Organic Carbon	>400,000	