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Western Refining
GALLUP

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NMED
Hazardous Waste Bureau

August 24, 2016

Certified Mail #7014 1820 0001 7489 0099

Mr. Carl Chavez, CHMM
Environmental Engineer
New Mexico Oil Conservation Division- Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: FINAL C-141 AND RESPONSE ACTION REPORT, WASTEWATER TREATMENT PLANT, CARBON CANISTER – RUPTURE DISK, DECEMBER 27, 2015 RELEASE, JANUARY 7, 2016 RELEASE

Dear Mr. Chavez:

Please find attached the final C-141 reports and a Response Action Report (Report) for the above mentioned releases. Western hopes you like the new Report and format which details the releases and cleanup from start to finish. The report includes a discussion of the release and process area, initial remediation, assessment, regulatory criteria comparisons, and conclusions and recommendations.

The following actions have been taken to prevent a reoccurrence of these events:

- Alarm set points were added to the WWTP PLC (programmable logic controller);
- Alarm set points were revised in the DCS (distributed control system);
- The WWTP procedure was revised to make one method of recirculation standard; and
- The WWTP procedure was revised to require only WWTP-A qualified operators to change valve lineups.

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.

If there are any questions, please contact Ed Riege at 505-722-0217.

Sincerely,

Daniel J. Statile
Vice President Refining
Western Refining Southwest, Inc. – Gallup Refinery

cc Brandon Powell, NMOCD District III
Kristen VanHorn NMHWB
Allen Hains, Western El Paso

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: WESTERN REFINING	Contact: Ed Riege
Address: I-40 / EXIT 39, JAMESTOWN,NM 87347	Telephone No.(505) 722-0217
Facility Name: WESTERN REFINING (GALLUP REFINERY)	Facility Type: Petroleum Refinery

Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

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

Latitude__35° 029' 024"__ **Longitude**__108° 024' 024"__

NATURE OF RELEASE

Type of Release: treated wastewater	Volume of Release > 158.5 bbls	Volume Recovered: undetermined
Source of Release: wastewater treatment plant carbon canister	Date and Hour of Occurrence 12/27/15 @ 1600 hrs	Date and Hour of Discovery 12/27/15 @ 1600 hrs
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? OCD (B. Powell); NMED (R Horowitz/K. VanHorn)	
By Whom? Loretta Morgan	Date and Hour: 12/27/15 2016 hrs	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Wastewater operators were back flushing the south carbon canister when wastewater was released from the rupture disk. A blocked valve downstream of the canister created pressure greater than 75 psi causing the rupture disk to rupture. Actions taken included the WWTP operators changing the flow from the south carbon canister to the north carbon canister. Maintenance was called out and vacuumed up the wastewater. Before the wastewater was spilled it had been treated by the carbon and a sample collected indicated the benzene was <.5 ppm. There were no safety or environmental concerns. (For additional information see the Response Action Report dated August 2016.)

Describe Area Affected and Cleanup Action Taken.*
The carbon canisters are located on the west side of the WWTP. The wastewater filled the earthen dike containment and overflowed allowing the wastewater to travel to the west downhill toward Pond EP-1. The wastewater did not reach EP-1. The standing wastewater was vacuumed with a Vac truck. On January 11, 2016, 2 to 3 inches of soil was removed from the area north of the containment structure and the lower level. (For drawings, photos, analytical and a full report see the Response Action Report dated August 2016.)

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ed Riege	Approved by Environmental Specialist:	
Title: Remediation Manager	Approval Date:	Expiration Date:
E-mail Address: ed.riege@wnr.com	Conditions of Approval:	Attached ☐
Date: 8/24/2016 Phone: (505) 722-0217		

* Attach Additional Sheets If Necessary

RESPONSE ACTION REPORT

Wastewater Treatment Plant
Carbon Canister – Rupture Disk
December 27, 2015 Release
January 7, 2016 Release

Western Refining

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

EPA ID# NMD000333211

AUGUST 2016

Tracy Payne
Senior Geologist

DiSorbo
Environmental Consulting Firm

8501 North Mopac Expy | Suite 300 | Austin, TX 78759
512.693.4190 | 512.279.3118 | www.disorboconsult.com

Response Action Report Checklist – WWTP Carbon Canister Release

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

		☒ Figure - Sampling Locations (Soil, Wells, Surface Water)
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☒	☐	• Appendix – Analytical
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Executive Summary

The Gallup Refinery is located 17 miles east of Gallup, New Mexico. This Response Action Report provides the details and data for two separate releases that occurred at the Wastewater Treatment Plant in December 2015 and January 2016.

Soil was excavated from the spill area. Soil confirmation samples were collected and analyzed for volatile organics, motor range, gasoline range and diesel range organics (EPA Method 8015), semivolatile organics and metals.

The soil confirmation samples collected from the spill area were reported to contain low concentrations that exceed the screening levels. The following constituents exceeded the screening levels:

- Arsenic;
- Benzene;
- 1,2,4-Trimethylbenzene;
- Ethylbenzene; and
- Total Xylenes.

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 location of the wastewater treatment plant on the northwestern portion of the refinery property. An aerial photograph of the wastewater treatment plant is provided as Figure 2.

1.1 General Information

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, sulfur recovery, merox treater, and hydrotreating. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

1.2 Discussion of the Releases

1.2.1 December 27, 2015 Release

At 16:00 on December 27, 2015, wastewater operators were back washing the south carbon canister when wastewater was released from the rupture disk. A blocked valve downstream of the canister created pressure greater than 75 PSI causing the rupture disk to rupture. The release had a duration of 35 minutes. It is estimated, with an average flow of 190.3 gallons per minute, that approximately 6,660.5 gallons (158.5 barrels) of wastewater were released. A copy of Western's calculations are included in Appendix A. The wastewater filled the earthen dike containment and subsequently overflowed allowing the wastewater to travel downhill toward Pond EP-1. The overflow did not reach Pond EP-1. The WWTP operators immediately upon discovery changed the flow from the south carbon canister to the north carbon canister. The area affected by the release is depicted on Figure 3.

Notification of the spill was provided to the NMED Hazardous Waste Bureau and the Oil Conservation Division on December 27, 2015 at 20:16. An initial written report (Form C-141) was completed on

January 8, 2016, for this release and is provided in Appendix B. A copy of the final Form C-141, which was completed on August 24, 2016, is also provided in Appendix B.

1.2.2 January 7, 2016 Release

At 23:00 on January 7, 2016, wastewater operators were back washing the south carbon canister when wastewater was released from the rupture disk. A blocked valve downstream of the canister created pressure greater than 75 PSI causing the rupture disk to rupture. The release had a duration of 20 minutes. It is estimated, with an average flow of 96.6 gallons per minute, that approximately 1,932 gallons (46 barrels) of wastewater was released. A copy of Western's calculations are included in Appendix A. The wastewater filled the earthen dike containment and subsequently overflowed allowing the wastewater to travel downhill toward Pond EP-1. The overflow did not reach Pond EP-1. The WWTP operators, immediately upon discovery, changed the flow from the south carbon canister to the north carbon canister. The area affected by the release is depicted on Figure 3.

Notification of the spill was provided to the Oil Conservation Division and the NMED Hazardous Waste Bureau on January 8, 2016 at 15:36 and 15:39, respectively. An initial written report (Form C-141) was completed on January 22, 2016, for this release and is provided in Appendix B. The final C-141 Form was completed on August 24, 2016 and is provided in Appendix B.

1.3 Characterization of the Release Material

1.3.1 December 27, 2015 Release

A sample of the spilled liquid was collected and submitted to Western's onsite laboratory. The analytical result showed that the wastewater had a benzene concentration of 0.45 mg/l. This concentration is less than the 0.5 mg/l RCRA Regulatory Limit. A copy of the documentation for the determination of the benzene concentration is included in Appendix C.

1.3.2 January 7, 2016 Release

A sample of the spilled liquid was collected and submitted to Western's onsite laboratory. The analytical result showed that the wastewater had a benzene concentration exceeding the 0.5 mg/l RCRA Regulatory Limit.

An analysis of the wastewater from the WWTP on November 12, 2015 reported the following concentrations:

- Benzene – 3.75365 mg/l;
- Toluene – 2.40118 mg/l;
- Ethylbenzene – 0.741223 mg/l;
- M,P Xylene – 1.09132 mg/l; and
- O-Xylene – 1.09254 mg/l.

A copy of the documentation for the determination of the above listed constituents and concentrations is included in Appendix C.

1.4 Discussion of the Process Area

Western operates a Wastewater Treatment Plant (WWTP), which went on line of May 2012. The wastewater treatment system is a network of curbing, paving, catch basins, and underground piping used to collect wastewater from various processing areas within the refinery. The wastewater effluent then flows into the equalization tanks and the NAPIS where the oil is separated from water. The skimmed slop oil is passed to a collection chamber where it is pumped back into the refinery process. The clarified water is routed to the new WWTP where benzene is removed and the treated water flows into the new pond STP-1. STP-1 consists of two bays, north and south and each bay is equipped with five aerators per bay. Effluent from STP-1 then flows into Evaporation Pond 2 and gravitates to the rest of the ponds.

During episodes of unit upsets or major storm events, the wastewater is held in one of the three equalization tanks, T-35, T-27 and T-28, which are used to handle large process and storm water flows allowing the flow to the NAPIS to be controlled. These tanks are also used to store wastewater if problems occur with the downstream equipment, i.e., NAPIS and the WWTP.

As seen on Figure 2 the WWTP is located in the northwest corner of the Gallup Refinery. The carbon canisters are located west of the WWTP building. Rupture disks are located at the inlet of the north and south canisters. The disks are set to rupture when the pressure reaches 75 PSI. A small earthen-diked containment structure is located west of the carbon canisters. West of the containment structure, the surface slopes downward to the west. This lower level is the same grade as the API separator and Ponds EP-1 and EP-2.

The carbon canisters are backwashed to remove deposits from the top of the carbon bed that can harden and impede the effluent flow through the carbon bed. The backwashing is used to fluff the bed to remove air from the carbon bed. This process is recommended by the manufacturer and

occurs before the canisters are put on line, and when there is a high pressure differential across the bed (35 PSI). A copy of the Standard Operating Procedure - Backwashing the Carbon Canister to Reduce Pressure on the Vessel has been provided in Appendix D. The wastewater that enters the canisters has been treated.

1.5 Site Conditions That Affect the Release

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 the WWTP is at an approximate elevation of 6,910 feet above mean sea level (msl). Photographs are included in this report and show the land surface in the immediate area.

The release occurred on the upper level immediately adjacent to the carbon canisters. The release then travelled down the slope to the lower level.

Section 2
Remediation Activities

2.1 Initial Remediation

2.1.1 December 27, 2015 Release

Western's Maintenance Department and contract personnel were called out to vacuum the spilled wastewater. The volume recovered is undetermined. A sample of the liquid was collected and submitted to Western's onsite laboratory for benzene analysis.

2.1.2 January 7, 2016 Release

Since the incident occurred at night and the area was covered with snow, assessment of the extent of the contamination was not completed until the next morning on January 8, 2016. A vacuum truck was used to remove the treated wastewater from the affected area at the WWTP around the carbon canister containment area and the sloping downhill area. The vacuum truck removed about 27 bbls from the containment area and an additional 5 to 7 bbls from the area downhill of the carbon canisters. A sample of the liquid was collected and submitted to Western's onsite laboratory for benzene analysis.

On January 11, 2016 approximately 2 to 3 inches of soil was removed from the area north of the containment structure and the lower level. Soil was not excavated on the slope between the carbon canisters and the lower level due to a safety hazard created by the presence of snow and ice. An estimated volume of 4 cubic yards of soil was excavated and placed in a roll off box. The contaminated soil was shipped to Gandy Marley, Inc. in Chavez County, New Mexico. A copy of the waste manifest is included in Appendix E. Figure 4 depicts the extent of the soil excavation. Photos of the spill area and areas of excavation are included in Appendix F.

2.2 Assessment – Soil Confirmation Sampling Event No. 1

2.2.1 Soil Sampling

On January 13, 2016, three soil samples were collected from three separate locations:

1. Carbon Canister - Sample #1 was collected north of the containment structure for the WWTP Carbon Canisters. The soil sample was collected from the surface to a depth of 4 inches below ground level.
2. Carbon Canister - Sample #2 was collected on the slope between the containment pit and the base of the slope. The soil sample was collected from the surface to a depth of 4 inches below ground level.
3. Carbon Canister - Sample #3 was collected at the base of the slope immediately adjacent to an aboveground pipeline. The soil sample was collected from the surface a depth of 4 inches below ground level.

Figure 4 depicts the locations of Carbon Canister - Soil Samples #1, #2 and #3 and are represented on the figure as locations CC-1, CC-2 and CC-3, respectively.

2.2.2 Soil Screening Results

Field screening was not conducted during the collection of soil samples.

2.2.3 Soil Sampling Analytical Results

On January 15, 2016 Carbon Canister - Soil Samples #1, #2 and #3 were delivered to Hall Environmental Analysis Laboratory, Inc. (HEAL). Each soil sample was analyzed for the following:

- Diesel Range Organics – EPA Method 8015M/D;
- Gasoline Range Organics – EPA Method 8015D; and
- Volatile Organics – EPA Method 8021B.

On January 20, 2016 HEAL issued Analytical Report No. 1601570. A copy of the report is provided in Appendix I. Table 1 provides a summary of the analytical results.

2.3 Assessment – Soil Confirmation Sampling Event No. 2

2.3.1 Soil Sampling

On April 7, 2016, one soil sample (Carbon Canister Overflow) was collected from the slope situated between the carbon canisters and the lower level. The soil sample was collected from the surface to a depth of 4 inches below ground level.

Figure 4 depicts the location of the soil sample as sample location CC-4.

2.3.2 Soil Screening Results

Field screening was not conducted during the collection of the soil sample.

2.3.3 Soil Sampling Analytical Results

On April 7, 2016 the sample "Carbon Canister Overflow" was delivered to HEAL. The soil sample was analyzed for the following:

- Diesel Range Organics – EPA Method 8015M/D;
- Motor Oil Range Organics – EPA Method 8015D;
- Gasoline Range Organics – EPA Method 8015D;
- Volatile Organics – EPA Method 8260B;
- Semi-Volatile Organics – EPA Method 8270D;
- Metals – EPA Method 6010B;
- Mercury – EPA Method 7471; and
- Cyanide – EPA Method 335.4.

On April 25, 2016 HEAL issued Analytical Report No. 1604730. A copy of the report is provided in Appendix I. Table 2 provides a summary of the analytical results.

2.4 Assessment – Soil Confirmation Sampling Event No. 3

2.4.1 Soil Sampling

On June 14, 2016, five soil samples were collected from five separate locations on the lower level of the excavation.

1. WWTP-CC-5 was collected approximately 54 feet north of the process unit and 13.5 feet west of the pipe rack. The soil sample was collected from the surface to a depth of 6 inches below ground level using a decontaminated hand auger.
2. WWTP-CC-6 was collected approximately 31 feet north of the process unit and 32 feet west of the pipe rack. The soil sample was collected from the surface to a depth of 6 inches below ground level using a decontaminated hand auger.
3. WWTP-CC-7 was collected approximately 46 east of the drain and 60 feet west of the pipe rack. The soil sample was collected from the surface a depth of 6 inches below ground level using a decontaminated hand auger.

4. WWTP-CC-8 was collected approximately 31 feet northeast of the drain. The soil sample was collected from the surface a depth of 6 inches below ground level using a decontaminated hand auger.
5. WWTP-CC-9 was collected approximately 59 feet northeast of the drain and 55 feet west of the pipe rack. The soil sample was collected from the surface a depth of 6 inches below ground level using a decontaminated hand auger.

Figure 4 depicts the locations of the soil samples. The soil samples WWTP-CC-5 thru WWTP-CC-9 are represented on the figure as locations CC-5 thru CC-9. A copy of the field methods used to collect the soil samples is included as Appendix G. Copies of the soil sampling logs are included in Appendix H.

2.4.2 Soil Screening Results

Field screening was not conducted during the collection of the soil sample.

2.4.3 Soil Sampling Analytical Results

On June 15, 2016 soil samples WWTP-CC-5 thru WWTP-CC-9 were delivered to HEAL. Each soil sample was analyzed for the following:

- Diesel Range Organics – EPA Method 8015M/D;
- Motor Oil Range Organics – EPA Method 8015D;
- Gasoline Range Organics – EPA Method 8015D;
- Volatile Organics – EPA Method 8260B;
- Semi-Volatile Organics – EPA Method 8270D; and
- Skinner List Metals – EPA Method 6010B.

On July 26, 2016 HEAL issued Analytical Report No. 1606819. A copy of the report is provided in Appendix I. Table 3 provides a summary of the analytical results.

2.5 Subsurface Soil Conditions

No soil borings or monitor wells were installed during the investigation.

2.6 Groundwater Conditions

A groundwater investigation was not conducted.

2.7 Surface Water Conditions

The releases did not reach surface water.

2.8 Surface Air and Subsurface Vapor Conditions

A vapor release was not associated these releases.

Section 3
Regulatory Criteria Comparisons

The potential cleanup levels (i.e., screening 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 June 2015 if NMED values are not available.

For non-residential properties (e.g., the Gallup Refinery), the soil screening levels (SSLs) 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.

The cleanup criteria are shown in Tables 1 through 3.

3.1 Soil Confirmation Sampling Event No. 1

On January 13, 2016, three soil samples were collected from three separate locations. Table 1 provides a summary of the analytical results. A review of the analytical results for volatile organics reported the benzene concentration (0.38 mg/kg) detected in CCSS#1 exceeded the Risk Based SSL for a Dilution Attenuation Factor (DAF) of 20 (0.038 mg/kg). The Diesel Range Organics were reported above the detection limit for CCSS#2 (13 mg/kg). This concentration is well below the Residential Exposure of 1000 mg/kg. The Gasoline Range Organics were reported above the detection limit for CCSS#1 (13 mg/kg).

3.2 Soil Confirmation Sampling Event No. 2

On April 7, 2016, one soil sample was collected from one location. Table 2 provides a summary of the analytical results. A review of the analytical results for metals reported that the arsenic concentration (1.6 mg/kg) detected in Carbon Canister Overflow exceeded the Risk Based SSL for a DAF of 20 (0.299 mg/kg).

3.3 Soil Confirmation Sampling Event No. 3

On June 14, 2016, five soil samples were collected from five separate locations on the lower level of the excavation. Table 3 provides a summary of the analytical results. A review of the analytical results for metals reported that the arsenic concentration (1.6 mg/kg) detected in WWTP-CC-5 exceeded the Risk Based SSL for a DAF of 20.

A review of the analytical results for volatile organics reported the following:

- 1,2,4-Trimethylbenzene concentrations (0.986J mg/kg – 2.87 mg/kg) detected in all five samples exceeded the Risk Based SSL for a DAF of 20 (0.42 mg/kg);
- Ethylbenzene concentrations (0.535J mg/kg – 1.25 mg/kg) detected in all five samples exceeded the Risk Based SSL for a DAF of 20 (0.262 mg/kg); and
- Total Xylenes concentrations detected in WWTP-CC-5, WWTP-CC-7, WWTP-CC-8 and WWTP-CC-9 (3.39 mg/kg – 4.65 mg/kg) exceeded the Risk Based SSL for a DAF of 20 2.98 mg/kg).

Section 4
Conclusions and Recommendations

On December 27, 2015 and January 7, 2016 wastewater operators were back washing the south carbon canister when wastewater was released from the rupture disk. These releases occurred in two areas.

4.1 Upper Level and Slope

The release occurred in the upper level immediately adjacent to the carbon canisters and travelled down the slope to the lower level. Neither the upper level nor the slope is part of an existing AOC or SWMU. The upper level around the containment was excavated and one soil sample was collected north of the containment. The analytical results for volatile organics reported the benzene concentration detected in Carbon Canister Soil Sample #1 exceeded the Risk Based SSL for a DAF of 20.

The slope was not immediately excavated. Carbon Canister Soil Sample #2 was collected along the slope within the extent of the spill. Carbon Canister Soil Sample #3 was collected at the base of slope within the extent of the spill. The analytical results for volatile organics were reported below detection limits for both samples.

After the slope was excavated an additional sample was collected. Carbon Canister Overflow sample (CC-4 on Figure 4) indicated the arsenic concentration exceeded the Risk Based SSL for a DAF of 20. The analytical results for volatile organics were reported below detection limits for the sample.

4.2 Lower Level

The release travelled down the slope to this lower level. This area is part of SWMU 15. The area on this lower level was excavated. On June 14, 2016, five soil samples (CC-5 thru CC-9 on Figure 4) were collected from five separate locations on the lower level of the excavation. A review of the analytical results for metals reported that the arsenic concentration detected in WWTP-CC-5 exceeded the Risk Based SSL for a DAF of 20.

A review of the analytical results for volatile organics reported the following:

- 1,2,4-Trimethylbenzene concentrations detected in all five samples exceeded the Risk Based SSL for a DAF of 20;
- Ethylbenzene concentrations detected in all five samples exceeded the Risk Based SSL for a DAF of 20; and
- Total Xylenes concentrations detected in WWTP-CC-5, WWTP-CC-7, WWTP-CC-8 and WWTP-CC-9 exceeded the Risk Based SSL for a DAF of 20.

4.3 Recommended Additional Excavation and Assessment

The reported concentrations for arsenic did exceed screening levels, but are very low at only 1.6 mg/kg and are most likely reflective of naturally occurring concentrations. Benzene was the only organic constituent to exceed the DAF 20 screening level in only one soil sample at a low concentration of 0.38 mg/kg. This single exceedance on the upper level is unlikely to pose a threat to groundwater resources and due to the high potential for any remaining benzene to rapidly degrade, no further action is recommended for this area.

On the lower level, three organic constituents were found to exceed the DAF 20 screening level, but all are less than one order of magnitude above the screening levels. These three constituents (1,2,4-trimethylbenzene, ethylbenzene, and total xylenes) are readily degradable under natural conditions and should not pose to usable groundwater resources. In addition, this same area will likely be investigated in the future when SWMU 15 is addressed. No further action is recommended at this time.

Tables

Table 1 **Soil Analytical Results – January 13, 2016**

Table 2 **Soil Analytical Results – April 7, 2016**

Table 3 **Soil Analytical Results – June 14, 2016**

Table 1
Soil Analytical Results - January 13, 2016
WWTP Carbon Canister
Western Refining Southwest - Gallup Refinery

Parameter Name	Residential Soil (mg/kg)	Source	Non-Residential Soil Screening Level (mg/kg)	Source	Risk Based SSL for a DAF of 20 (mg/kg)	Source	Carbon Canister-Soil Sample #1	Carbon Canister-Soil Sample #2	Carbon Canister-Soil Sample #3
Hall Environmental Lab ID							1601570-001	1601570-002	1601570-003
Sample Date							1/13/2016	1/13/2016	1/13/2016
Volatile Organics - mg/kg									
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	0.38	<0.046	<0.048
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	0.59	<0.046	<0.048
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	0.10	<0.046	<0.048
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	0.46	<0.093	<0.096
EPA Method 8015D - mg/kg									
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-	-	<9.3	13	<9.7
Motor Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-	-	<47	<48	<48
Gasoline Range Organics (GRO)	-	-	-	-	-	-	13	<4.6	<4.8

- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (July 2015)

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-Closure 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) 20 Screening Level

Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF 20

Table 2
Soil Analytical Results - April 7, 2016
WWTP Carbon Canister
Western Refining Southwest - Gallup Refinery

Parameter Name	Residential Soil (mg/kg)	Source	Non-Residential Soil Screening Level (mg/kg)	Source	Risk Based SSL for a DAF of 20 (mg/kg)	Source	Carbon Canister Overflow
Hall Environmental Lab ID							1604730-001
Sample Date							4/7/2016
EPA Method 8015D - mg/kg							
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-	-	<3.4
Gasoline Range Organics (GRO)	-	-	-	-	-	-	<0.68
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-	-	<47
EPA Method 7470 mg/kg							
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	0.0067
EPA Method 335.4 - mg/kg							
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	<0.282
EPA Method 6010B Soil Metals - mg/kg							
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	2.2
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	1.6
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	360
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	0.77
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	<0.063
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	6.8
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	3.7
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	4.2
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	6.8
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E-01	(8)	<1.1
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	<0.032
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	14
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	13
EPA Method 8260B - mg/kg							
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(9)	<0.0032
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	<0.0020
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	<0.0054
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	<0.0039
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	<0.0018
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	<0.011
1,1-Dichloropropene	-	-	-	-	-	-	<0.0026
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	<0.0050
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	<0.0057
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	<0.0035
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	<0.0024
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	<0.010
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	<0.0024
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	<0.0029
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	<0.0086
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	<0.0028
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	<0.0024
1,3-Dichlorobenzene	-	-	-	-	-	-	<0.0027
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	<0.0038
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	<0.0041
1,4-Dioxane	5.30E+01	(3)	2.40E+02	(7)	9.40E-04	(9)	<0.16
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	<0.0074
2,2-Dichloropropane	-	-	-	-	-	-	<0.0019
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	<0.019
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	<0.0024

Table 2
Soil Analytical Results - April 7, 2016
WWTP Carbon Canister
Western Refining Southwest - Gallup Refinery

Parameter Name	Residential Soil (mg/kg)	Source	Non-Residential Soil Screening Level (mg/kg)	Source	Risk Based SSL for a DAF of 20 (mg/kg)	Source	Carbon Canister Overflow
Hall Environmental Lab ID							1604730-001
Sample Date							4/7/2016
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	<0.018
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	<0.0071
4-Chlorotoluene	-	-	-	-	-		<0.0029
4-Isopropyltoluene	-	-	-	-	-	-	<0.0030
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	<0.0097
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	<0.043
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	<0.013
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	<0.0027
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	<0.0019
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	<0.0040
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	<0.012
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	<0.011
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	<0.0022
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	<0.0027
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	<0.0066
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	<0.0025
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	<0.0029
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	<0.0019
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	<0.0031
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	<0.0030
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	<0.0029
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	<0.010
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	<0.0027
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	<0.0041
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	<0.0028
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	<0.010
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	0.0097
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	<0.0052
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	<0.0029
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	<0.0026
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	<0.0046
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	<0.0030
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	<0.0027
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	<0.0027
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	<0.0020
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	<0.0093
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	<0.0048
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	<0.0036
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	<0.0025
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	<0.0027
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	<0.0063
EPA Method 8270B - mg/kg							
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	<0.05
1,3-Dichlorobenzene	-	-	-	-	-	-	<0.05
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	<0.05
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	<0.05
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	<0.05
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	<0.05

Table 2
Soil Analytical Results - April 7, 2016
WWTP Carbon Canister
Western Refining Southwest - Gallup Refinery

Parameter Name	Residential Soil (mg/kg)	Source	Non-Residential Soil Screening Level (mg/kg)	Source	Risk Based SSL for a DAF of 20 (mg/kg)	Source	Carbon Canister Overflow
Hall Environmental Lab ID							1604730-001
Sample Date							4/7/2016
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	<0.05
3+4-Methylphenol	-	-	-	-	-	-	<0.05
4-Nitrophenol	-	-	-	-	-	-	<0.05
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	<0.05
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	<0.05
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	<0.05
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	<0.05
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	<0.05
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	<0.05
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	<0.05
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	<0.05
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	<0.05
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	<0.05
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	<0.05
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	<0.05
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	<0.05
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	<0.05
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	<0.05
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	<0.05
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	<0.05
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	0.05
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	<0.05
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	<0.05
Quinoline	1.80E-01	(3)	7.70E-01	(7)	7.80E-04	(9)	<0.05

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (July 2015)
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-Closure 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
Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) 20 Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF 20

Table 3
Soil Analytical Results - June 14, 2016
WWTP Carbon Canister Release
Western Refining Southwest - Gallup Refinery

Parameter Name	Residential Soil (mg/kg)	Source	Non-Residential Soil Screening Level (mg/kg)	Source	Risk Based SSL for a DAF of 20 (mg/kg)	Source	WWTP-CC-5 (0-6")	WWTP-CC-6 (0-6")	WWTP-CC-7 (0-6")	WWTP-CC-8 (0-6")	WWTP-CC-9 (0-6")
Hall Environmental Analytical Lab ID							1606819-001	1606819-002	1606819-003	1606819-004	1606819-005
Sample Date							6/14/2016	6/14/2016	6/14/2016	6/14/2016	6/14/2016
EPA Method 8015D - mg/kg											
Diesel Range Organics (DRO)	1.00E+03	(11)	3.80E+03	(11)	-	-	<1.8	16	<1.8	12	6.9 J
Gasoline Range Organics (GRO)	-	-	-	-	-	-	<0.67	<0.68	<0.77	2.8 J	<0.81
Motor Oil Range Organics (MRO)	1.00E+03	(11)	3.80E+03	(11)	-	-	<48	<49	<48	<50	<47
EPA Method 7470 mg/kg											
Mercury	2.38E+01	(1)	2.07E+01	(5)	6.54E-01	(8)	0.011	0.031 J	0.031 J	0.065	0.028 J
EPA Method 6010B Soil Metals - mg/kg											
Antimony	3.13E+01	(1)	1.42E+02	(5)	6.56E+00	(8)	<1.2	<1.2	<1.2	<1.2	<1.2
Arsenic	4.25E+00	(1)	2.15E+01	(4)	2.99E-01	(8)	1.6	<3.6	<3.6	<7.2	<3.7
Barium	1.56E+04	(1)	4.35E+03	(5)	2.70E+03	(8)	540	460	470	1400	760
Beryllium	1.56E+02	(1)	1.48E+02	(5)	1.96E+02	(8)	0.49	0.41	0.27	0.37	0.36
Cadmium	7.05E+01	(1)	7.21E+01	(5)	9.39E+00	(8)	<0.063	<0.063	<0.063	<0.063	<0.064
Chromium	9.66E+01	(1)	1.34E+02	(5)	2.01E+05	(8)	4.8	3.9	2.7	4.8	3.6
Cobalt	2.30E+01	(2)	3.50E+02	(6)	5.40E+00	(9)	2.4	2.3	1.6	2.2	2.0
Lead	4.00E+02	(1)	8.00E+02	(4)	2.80E+02	(10)	3.3	0.31	<0.17	0.82	0.24 J
Nickel	1.56E+03	(1)	6.19E+03	(5)	4.85E+02	(8)	4.1	4.2	2.5	3.7	3.4
Selenium	3.91E+02	(1)	1.75E+03	(5)	1.02E-01	(8)	<1.1	<2.2	<2.2	<2.2	<2.2
Silver	3.91E+02	(1)	1.77E+03	(5)	1.38E+01	(8)	<0.032	<0.032	<0.031	<0.031	<0.032
Vanadium	3.94E+02	(1)	6.14E+02	(5)	1.26E+03	(8)	13	9.7	9.2	11	12
Zinc	2.35E+04	(1)	1.06E+05	(5)	7.41E+03	(8)	10	13	5.6	9.4	9.2
EPA Method 335.4 - mg/kg											
Cyanide	1.12E+01	(1)	1.21E+01	(5)	5.22E-03	(8)	<0.256	<0.259	<0.239	<0.233	<0.253
EPA Method 8260B - mg/kg											
1,1,1,2-Tetrachloroethane	2.81E+01	(1)	1.37E+02	(4)	3.59E-02	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
1,1,1-Trichloroethane	1.44E+04	(1)	1.36E+04	(5)	5.11E+01	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
1,1,2,2-Tetrachloroethane	7.98E+00	(1)	3.94E+01	(4)	4.80E-03	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
1,1,2-Trichloroethane	2.61E+00	(1)	2.30E+00	(5)	2.23E-03	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
1,1-Dichloroethane	7.86E+01	(1)	3.83E+02	(4)	1.36E-01	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
1,1-Dichloroethene	4.40E+02	(1)	4.24E+02	(5)	1.95E+00	(8)	<0.266	<0.250	<0.347	<0.280	<0.271
1,1-Dichloropropene	-	-	-	-	-	-	<1.62	<1.53	<2.12	<1.71	<1.66
1,2,3-Trichlorobenzene	6.30E+01	(2)	9.30E+02	(6)	4.20E-01	(9)	<0.393	<0.370	<0.513	<0.414	<0.401
1,2,3-Trichloropropane	5.10E-02	(1)	1.21E+00	(4)	5.21E-05	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	<0.492	<0.464	<0.643	<0.519	<0.502
1,2,4-Trimethylbenzene	5.80E+01	(2)	2.40E+02	(6)	4.20E-01	(9)	2.17	0.986 J	2.87	2.75	2.08
1,2-Dibromo-3-chloropropane	8.58E-02	(1)	1.18E+00	(4)	2.34E-05	(8)	<0.173	<0.163	<0.226	<0.182	<0.176
1,2-Dibromoethane (EDB)	6.72E-01	(1)	3.31E+00	(4)	3.52E-04	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	<0.236	<0.223	<0.309	<0.249	<0.241
1,2-Dichloroethane (EDC)	8.32E+00	(1)	4.07E+01	(4)	8.14E-03	(8)	<1.62	<1.53	<2.12	<1.71	<1.66

Table 3
Soil Analytical Results - June 14, 2016
WWTP Carbon Canister Release
Western Refining Southwest - Gallup Refinery

Parameter Name	Residential Soil (mg/kg)	Source	Non-Residential Soil Screening Level (mg/kg)	Source	Risk Based SSL for a DAF of 20 (mg/kg)	Source	WWTP-CC-5 (0-6")	WWTP-CC-6 (0-6")	WWTP-CC-7 (0-6")	WWTP-CC-8 (0-6")	WWTP-CC-9 (0-6")
Hall Environmental Analytical Lab ID							1606819-001	1606819-002	1606819-003	1606819-004	1606819-005
Sample Date							6/14/2016	6/14/2016	6/14/2016	6/14/2016	6/14/2016
1,2-Dichloropropane	1.78E+01	(1)	2.54E+01	(5)	2.43E-02	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.20E+04	(6)	3.40E+00	(9)	0.746 J	0.321 J	0.944 J	0.967 J	0.654
1,3-Dichlorobenzene	-	-	-	-	-	-	<0.300	<0.282	<0.392	<0.316	<0.306
1,3-Dichloropropane	1.60E+03	(2)	2.30E+04	(6)	2.60E+00	(9)	<1.62	<1.53	<2.12	<1.71	<1.66
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	<0.304	<0.286	<0.397	<0.320	<0.310
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	<0.184	<0.174	<0.241	<0.195	<0.188
2,2-Dichloropropane	-	-	-	-	-	-	<0.205	<0.193	<0.268	<0.216	<0.209
2-Butanone	3.74E+04	(1)	9.17E+04	(5)	2.01E+01	(8)	<0.585	<0.551	<0.765	<0.617	<0.597
2-Chlorotoluene	1.56E+03	(1)	7.08E+03	(5)	3.56E+00	(8)	<0.276	<0.260	<0.361	<0.291	<0.282
2-Hexanone	2.00E+02	(2)	1.30E+03	(6)	1.76E-01	(9)	<0.404	<0.381	<0.528	<0.426	<0.412
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	<0.427	<0.402	<0.558	<0.450	<0.436
4-Chlorotoluene	-	-	-	-	-		<0.270	<0.254	<0.353	<0.284	<0.275
4-Isopropyltoluene	-	-	-	-	-	-	<0.304	<0.287	<0.398	<0.321	<0.311
4-Methyl-2-pentanone	5.81E+03	(1)	2.02E+04	(5)	4.80E+00	(8)	<0.325	<3.06	<4.24	<3.42	<3.31
Acetone	6.63E+04	(1)	2.42E+05	(5)	4.98E+01	(8)	12.9	8.32	5.77 J	9.91	5.31 J
Benzene	1.78E+01	(1)	8.72E+01	(4)	3.80E-02	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
Bromobenzene	2.90E+02	(2)	1.80E+03	(6)	8.40E-01	(9)	<0.165	<0.155	<0.216	<0.174	<0.168
Bromodichloromethane	6.19E+00	(1)	3.02E+01	(4)	6.21E-03	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
Bromoform	6.74E+02	(1)	3.25E+03	(4)	4.11E-01	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
Bromomethane	1.77E+01	(1)	1.79E+01	(5)	3.43E-02	(8)	<0.292	<0.275	<0.382	<0.308	<0.298
Carbon disulfide	1.55E+03	(1)	1.62E+03	(5)	4.42E+00	(8)	<0.600	<0.565	<0.785	<0.633	<0.612
Carbon tetrachloride	1.07E+01	(1)	5.25E+01	(4)	3.33E-02	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
Chlorobenzene	3.78E+02	(1)	4.12E+02	(5)	8.36E-01	(8)	<0.186	<0.175	<0.243	<0.196	<0.190
Chloroethane	1.90E+04	(1)	1.66E+04	(5)	1.07E+02	(8)	<0.299	<0.282	<0.392	<0.316	<0.306
Chloroform	5.90E+00	(1)	2.87E+01	(4)	1.09E-02	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
Chloromethane	4.11E+01	(1)	2.01E+02	(4)	9.51E-02	(8)	<0.411	<0.387	<0.537	<0.434	<0.419
cis-1,2-DCE	1.56E+02	(1)	7.08E+02	(5)	1.84E-01	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
cis-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
Dibromochloromethane	1.39E+01	(1)	6.74E+01	(4)	7.54E-03	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
Dibromomethane	2.30E+01	(2)	9.80E+01	(6)	4.00E-02	(9)	<1.62	<1.53	<2.12	<1.71	<1.66
Dichlorodifluoromethane	1.82E+02	(1)	1.61E+02	(5)	7.23E+00	(8)	<0.947	<0.892	<1.24	<0.999	<0.967
Ethylbenzene	7.51E+01	(1)	3.68E+02	(4)	2.62E-01	(8)	0.990 J	0.535 J	1.22 J	1.25	0.952 J
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	<0.370	<0.348	<0.484	<0.390	<0.377
Isopropylbenzene	2.36E+03	(1)	2.74E+03	(5)	1.14E+01	(8)	<0.204	<0.192	<0.267	<0.215	<0.208
Methyl tert-butyl ether (MTBE)	9.75E+02	(1)	4.82E+03	(4)	5.53E-01	(8)	<0.273	<0.257	<0.356	<0.287	<0.278
Methylene chloride	4.09E+02	(1)	1.21E+03	(5)	4.71E-01	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
n-Butylbenzene	3.90E+03	(2)	5.80E+04	(6)	6.40E+01	(9)	<0.395	<0.372	<0.517	<0.417	<0.403

Table 3
Soil Analytical Results - June 14, 2016
WWTP Carbon Canister Release
Western Refining Southwest - Gallup Refinery

Parameter Name	Residential Soil (mg/kg)	Source	Non-Residential Soil Screening Level (mg/kg)	Source	Risk Based SSL for a DAF of 20 (mg/kg)	Source	WWTP-CC-5 (0-6")	WWTP-CC-6 (0-6")	WWTP-CC-7 (0-6")	WWTP-CC-8 (0-6")	WWTP-CC-9 (0-6")
Hall Environmental Analytical Lab ID							1606819-001	1606819-002	1606819-003	1606819-004	1606819-005
Sample Date							6/14/2016	6/14/2016	6/14/2016	6/14/2016	6/14/2016
n-Propylbenzene	3.80E+03	(2)	2.40E+04	(6)	2.40E+01	(9)	<0.290	<0.274	<0.380	<0.306	<0.296
sec-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	1.18E+02	(9)	<0.288	<0.271	<0.377	<0.304	<0.294
Styrene	7.26E+03	(1)	1.02E+04	(5)	2.06E+01	(8)	<0.207	<0.195	<0.271	<0.219	<0.212
tert-Butylbenzene	7.80E+03	(2)	1.20E+05	(6)	3.20E+01	(9)	<0.237	<0.223	<0.310	<0.250	<0.242
Tetrachloroethene (PCE)	1.11E+02	(1)	1.20E+02	(5)	3.21E-01	(8)	<0.213	<0.201	<0.279	<0.225	<0.218
Toluene	5.23E+03	(1)	1.40E+04	(5)	1.21E+01	(8)	3.45	2.22	4.44	4.11	3.33
trans-1,2-DCE	2.95E+02	(1)	3.05E+02	(5)	4.69E-01	(8)	<0.164	<0.154	<0.214	<0.173	<0.167
trans-1,3-Dichloropropene	2.93E+01	(1)	1.30E+02	(5)	2.80E-02	(8)	<0.196	<0.185	<0.257	<0.207	<0.200
Trichloroethene (TCE)	6.77E+00	(1)	6.90E+00	(5)	1.75E-02	(8)	<1.62	<1.53	<2.12	<1.71	<1.66
Trichlorofluoromethane	1.23E+03	(1)	1.13E+03	(5)	1.57E+01	(8)	<0.204	<0.192	<0.267	<0.215	<0.208
Vinyl chloride	7.42E-01	(1)	2.84E+01	(4)	1.35E-03	(8)	<0.427	<0.402	<2.12	<0.450	<0.436
Xylenes, Total	8.71E+02	(1)	7.98E+02	(5)	2.98E+00	(8)	3.55	1.91	4.65	4.53	3.39
EPA Method 8270C - mg/kg ***											
1,2,4-Trichlorobenzene	8.29E+01	(1)	7.91E+01	(5)	1.76E-01	(8)	<0.22	<0.21	<0.22	<0.22	<0.22
1,2-Dichlorobenzene	2.15E+03	(1)	2.50E+03	(5)	4.58E+00	(8)	<0.15	<0.15	<0.15	<0.15	<0.15
1,3-Dichlorobenzene	-	-	-	-	-	-	<0.15	<0.15	<0.15	<0.15	<0.15
1,4-Dichlorobenzene	3.28E+01	(1)	1.59E+02	(4)	7.20E-02	(8)	<0.17	<0.17	<0.17	<0.17	<0.17
1-Methylnaphthalene	1.80E+02	(3)	7.30E+02	(7)	1.16E-01	(9)	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,5-Trichlorophenol	6.16E+03	(1)	2.69E+04	(5)	6.62E+01	(8)	<0.20	<0.20	<0.20	<0.20	<0.20
2,4,6-Trichlorophenol	6.16E+01	(1)	2.69E+02	(5)	6.74E-01	(8)	<0.16	<0.16	<0.17	<0.17	<0.17
2,4-Dichlorophenol	1.85E+02	(1)	8.07E+02	(5)	8.25E-01	(8)	<0.19	<0.18	<0.19	<0.19	<0.19
2,4-Dimethylphenol	1.23E+03	(1)	5.38E+03	(5)	6.45E+00	(8)	<0.22	<0.22	<0.22	<0.22	<0.22
2,4-Dinitrophenol	1.23E+02	(1)	5.38E+02	(5)	6.71E-01	(8)	<0.13	<0.13	<0.13	<0.13	<0.13
2,4-Dinitrotoluene	1.71E+01	(1)	8.23E+01	(4)	4.91E-02	(8)	<0.18	<0.18	<0.18	<0.18	<0.18
2,6-Dinitrotoluene	3.56E+00	(1)	1.72E+01	(4)	1.02E-02	(8)	<0.21	<0.21	<0.21	<0.21	<0.21
2-Chloronaphthalene	6.26E+03	(1)	2.83E+04	(5)	5.70E+01	(8)	<0.16	<0.16	<0.16	<0.16	<0.16
2-Chlorophenol	3.91E+02	(1)	1.77E+03	(5)	1.15E+00	(8)	<0.16	<0.16	<0.16	<0.16	<0.16
2-Methylnaphthalene	2.40E+02	(2)	3.00E+03	(6)	3.80E+00	(9)	<0.24	<0.24	<0.24	<0.24	<0.24
'2-Methylphenol (cresol,o-)	3.20E+03	(2)	4.10E+04	(6)	1.50E+01	(9)	<0.17	<0.17	<0.17	<0.17	<0.17
2-Nitroaniline	6.30E+02	(2)	8.00E+03	(6)	1.60E+00	(9)	<0.21	<0.21	<0.21	<0.22	<0.21
2-Nitrophenol	-	-	-	-	-	-	<0.20	<0.20	<0.20	<0.20	<0.20
3,3´-Dichlorobenzidine	1.18E+01	(1)	5.70E+01	(4)	1.23E-01	(8)	<0.15	<0.15	<0.15	<0.15	<0.15
3+4-Methylphenol	-	-	-	-	-	-	<0.14	<0.14	<0.14	<0.15	<0.14
3-Nitroaniline	-	-	-	-	-	-	<0.18	<0.17	<0.18	<0.18	<0.18
4,6-Dinitro-2-methylphenol	4.93E+00	(1)	2.15E+01	(5)	3.94E-02	(8)	<0.12	<0.12	<0.12	<0.12	<0.12
4-Bromophenyl phenyl ether	-	-	-	-	-	-	<0.19	<0.19	<0.19	<0.19	<0.19
4-Chloro-3-methylphenol	-	-	-	-	-	-	<0.24	<0.24	<0.24	<0.24	<0.24
4-Chloroaniline	2.70E+01	(3)	1.10E+02	(7)	3.20E-03	(9)	<0.22	<0.22	<0.22	<0.22	<0.22

Table 3
Soil Analytical Results - June 14, 2016
WWTP Carbon Canister Release
Western Refining Southwest - Gallup Refinery

Parameter Name	Residential Soil (mg/kg)	Source	Non-Residential Soil Screening Level (mg/kg)	Source	Risk Based SSL for a DAF of 20 (mg/kg)	Source	WWTP-CC-5 (0-6")	WWTP-CC-6 (0-6")	WWTP-CC-7 (0-6")	WWTP-CC-8 (0-6")	WWTP-CC-9 (0-6")
Hall Environmental Analytical Lab ID							1606819-001	1606819-002	1606819-003	1606819-004	1606819-005
Sample Date							6/14/2016	6/14/2016	6/14/2016	6/14/2016	6/14/2016
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	<0.23	<0.23	<0.23	<0.23	<0.23
4-Nitroaniline	2.70E+02	(3)	1.10E+03	(7)	3.20E-02	(9)	<0.14	<0.14	<0.14	<0.14	<0.14
4-Nitrophenol	-	-	-	-	-	-	<0.15	<0.15	<0.15	<0.15	<0.15
Acenaphthene	3.48E+03	(1)	1.51E+04	(5)	8.25E+01	(8)	<0.17	<0.17	<0.17	<0.17	<0.17
Acenaphthylene	-	-	-	-	-	-	<0.16	<0.16	<0.16	<0.16	<0.16
Aniline	9.50E+02	(3)	4.00E+03	(7)	9.20E-02	(9)	<0.19	<0.19	<0.19	<0.19	<0.19
Anthracene	1.74E+04	(1)	7.53E+04	(5)	8.51E+02	(8)	<0.13	<0.13	<0.13	<0.13	<0.13
Azobenzene	5.60E+01	(3)	2.60E+02	(7)	1.84E+06	(9)	<0.24	<0.24	<0.24	<0.24	<0.24
Benz(a)anthracene	1.53E+00	(1)	3.23E+01	(4)	1.82E+00	(8)	<0.17	<0.17	<0.17	<0.17	<0.17
Benzo(a)pyrene	1.53E-01	(1)	3.23E+00	(4)	6.05E-01	(8)	<0.15	<0.15	<0.15	<0.15	<0.15
Benzo(b)fluoranthene	1.53E+00	(1)	3.23E+01	(4)	6.17E+00	(8)	<0.18	<0.18	<0.18	<0.18	<0.18
Benzo(g,h,i)perylene	-	-	-	-	-	-	<0.18	<0.17	<0.18	<0.18	<0.18
Benzo(k)fluoranthene	1.53E+01	(1)	3.23E+02	(4)	6.05E+01	(8)	<0.18	<0.17	<0.18	<0.18	<0.18
Benzoic acid	2.50E+05	(2)	3.30E+06	(6)	3.60E+02	(9)	<0.16	<0.16	<0.17	<0.17	<0.17
Benzyl alcohol	6.30E+03	(2)	8.20E+04	(6)	9.60E+00	(9)	<0.16	<0.16	<0.16	<0.16	<0.16
Bis(2-chloroethoxy)methane	1.90E+02	(2)	2.50E+03	(6)	2.60E-01	(9)	<0.22	<0.21	<0.22	<0.22	<0.22
Bis(2-chloroethyl)ether	3.11E+00	(1)	1.95E+00	(5)	6.05E-04	(8)	<0.15	<0.15	<0.15	<0.15	<0.15
Bis(2-chloroisopropyl)ether	9.93E+01	(1)	5.19E+02	(4)	4.73E-02	(8)	<0.18	<0.18	<0.18	<0.18	<0.18
Bis(2-ethylhexyl)phthalate	3.80E+02	(1)	1.83E+03	(4)	2.00E+02	(8)	<0.16	<0.16	<0.16	<0.16	<0.16
Butyl benzyl phthalate	2.90E+03	(3)	1.20E+04	(7)	4.60E+00	(9)	<0.18	<0.18	<0.18	<0.18	<0.18
Carbazole	-	-	-	-	-	-	<0.13	<0.13	<0.13	<0.14	<0.13
Chrysene	1.53E+02	(1)	3.23E+03	(4)	1.86E+02	(8)	<0.17	<0.17	<0.17	<0.17	<0.17
Dibenz(a,h)anthracene	1.53E-01	(1)	3.23E+00	(4)	6.11E+00	(8)	<0.16	<0.16	<0.16	<0.16	<0.16
Dibenzofuran	-	-	-	-	-	-	<0.20	<0.20	<0.20	<0.20	<0.20
Diethyl phthalate	4.93E+04	(1)	2.15E+05	(5)	9.79E+01	(8)	<0.20	<0.20	<0.20	<0.20	<0.20
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(5)	1.61E+03	(8)	<0.19	<0.19	<0.19	<0.20	<0.19
Di-n-butyl phthalate	6.16E+03	(1)	2.69E+04	(5)	3.38E+01	(8)	<0.15	<0.15	<0.15	<0.15	<0.15
Di-n-octyl phthalate	-	-	-	-	-	-	<0.17	<0.17	0.17 J	<0.17	<0.17
Fluoranthene	2.32E+03	(1)	1.00E+04	(5)	1.34E+03	(8)	<0.11	<0.11	<0.11	<0.12	<0.11
Fluorene	2.32E+03	(1)	1.00E+04	(5)	8.00E+01	(8)	<0.18	<0.18	<0.18	<0.18	<0.18
Hexachlorobenzene	3.33E+00	(1)	1.60E+01	(4)	9.22E-02	(8)	<0.16	<0.16	<0.16	<0.16	<0.16
Hexachlorobutadiene	6.16E+01	(1)	2.69E+02	(5)	8.79E-02	(8)	<0.22	<0.22	<0.22	<0.23	<0.22
Hexachlorocyclopentadiene	3.70E+02	(1)	8.67E+02	(5)	1.34E+00	(8)	<0.23	<0.23	<0.23	<0.23	<0.23
Hexachloroethane	4.31E+01	(1)	1.88E+02	(5)	6.62E-02	(8)	<0.17	<0.17	<0.17	<0.17	<0.17
Indeno(1,2,3-cd)pyrene	1.53E+00	(1)	3.23E+01	(4)	2.01E+01	(8)	<0.16	<0.15	<0.16	<0.16	<0.16
Naphthalene	4.97E+01	(1)	1.59E+02	(5)	8.23E-02	(8)	<0.19	<0.19	<0.19	<0.19	<0.19
Nitrobenzene	6.04E+01	(1)	2.93E+02	(4)	1.44E-02	(8)	<0.21	<0.20	<0.21	<0.21	<0.21
N-Nitrosodi-n-propylamine	7.80E-01	(3)	3.30E+00	(7)	1.62E-04	(9)	<0.19	<0.19	<0.19	<0.19	<0.19

Table 3
Soil Analytical Results - June 14, 2016
WWTP Carbon Canister Release
Western Refining Southwest - Gallup Refinery

Parameter Name	Residential Soil (mg/kg)	Source	Non-Residential Soil Screening Level (mg/kg)	Source	Risk Based SSL for a DAF of 20 (mg/kg)	Source	WWTP-CC-5 (0-6")	WWTP-CC-6 (0-6")	WWTP-CC-7 (0-6")	WWTP-CC-8 (0-6")	WWTP-CC-9 (0-6")
Hall Environmental Analytical Lab ID							1606819-001	1606819-002	1606819-003	1606819-004	1606819-005
Sample Date							6/14/2016	6/14/2016	6/14/2016	6/14/2016	6/14/2016
N-Nitrosodiphenylamine	7.94E-03	(1)	1.71E-01	(4)	9.84E-06	(8)	<0.19	<0.19	<0.19	<0.20	<0.19
Pentachlorophenol	9.85E+00	(1)	4.45E+01	(4)	6.08E-02	(8)	<0.13	<0.13	<0.13	<0.13	<0.13
Phenanthrene	1.74E+03	(1)	7.53E+03	(5)	8.59E+01	(8)	<0.14	<0.13	<0.14	<0.14	<0.14
Phenol	1.83E+04	(1)	7.74E+04	(5)	5.23E+01	(8)	<0.15	<0.15	<0.15	<0.15	<0.15
Pyrene	1.74E+03	(1)	7.53E+03	(5)	1.92E+02	(8)	<0.15	<0.15	<0.15	<0.15	<0.15
Pyridine	7.80E+01	(2)	1.20E+03	(6)	1.36E-01	(9)	<0.16	<0.16	<0.16	<0.16	<0.16

- No screening level or analytical result available
NMED - Risk Assessment Guidance for Site Investigations and Remediation (July 2015)
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-Closure 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
Bold represents value above Non-Residential Screening Level
yellow highlight represents value above Leachate (DAF) 20 Screening Level
Bold with yellow highlight value exceeds Non-Residential Screening Level and DAF 20
Laboratory data flags
J - Analyte detected below quantitation limits
E - Value above quantitation limits
EPA Method 8270C - mg/kg *** - All data was flagged with "D" - Sample diluted due to matrix

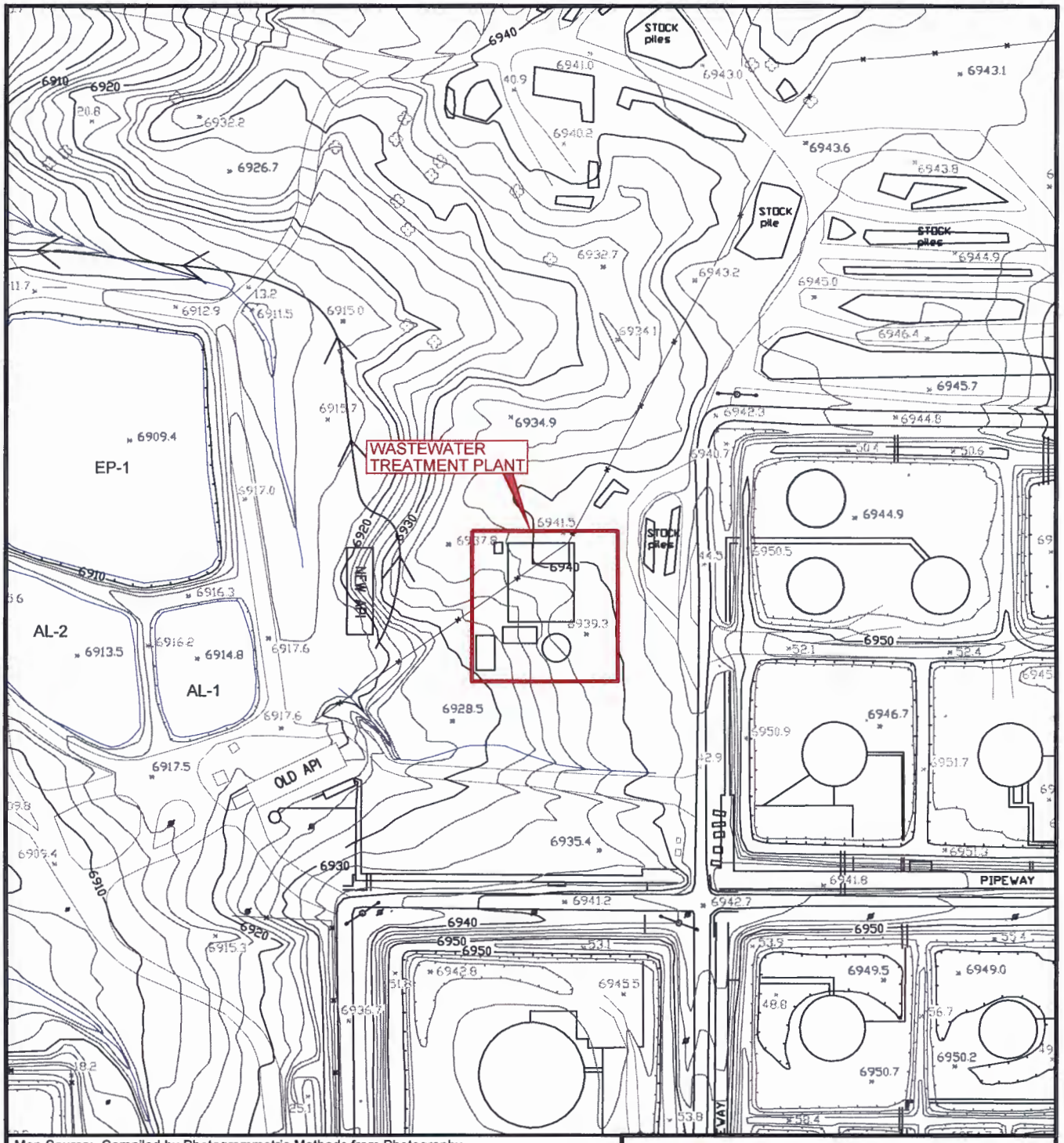
Figures

Figure 1 **Site Location Map**

Figure 2 **Aerial Photo of Wastewater Treatment Plant**

Figure 3 **Extent of Spill**

Figure 4 **Soil Sampling Locations**



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

0 150
SCALE IN FEET

QUADRANGLE LOCATION

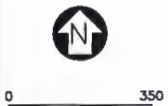
Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:07/06/16	FILE:WestRef-dA47

FIGURE 1
SITE LOCATION MAP
WASTEWATER TREATMENT PLANT

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

Aerial Source: Google Maps 03/18/2016



QUADRANGLE LOCATION

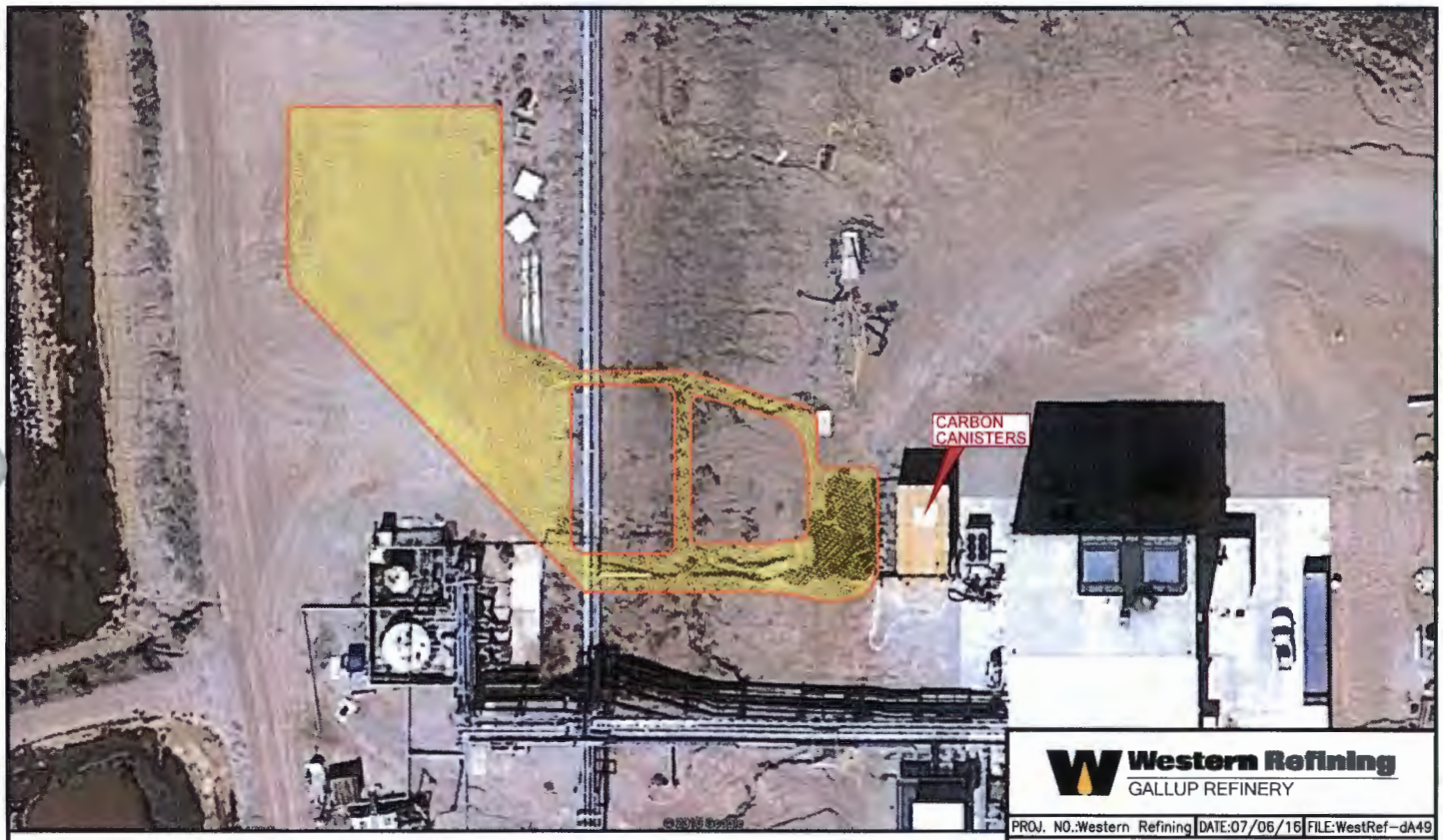
Western Refining
GALLUP REFINERY

PROJ. NO. Western Refining	DATE: 07/06/16	FILE: WestRef-dA48

FIGURE 2
AERIAL PHOTO OF
WASTEWATER TREATMENT PLANT

DiSorbo
Environmental Consulting Firm

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



Aerial Source: Google Maps, 03/18/2016

N

0 50
SCALE IN FEET

LEGEND
EXTENT OF SPILL

QUADRANGLE LOCATION

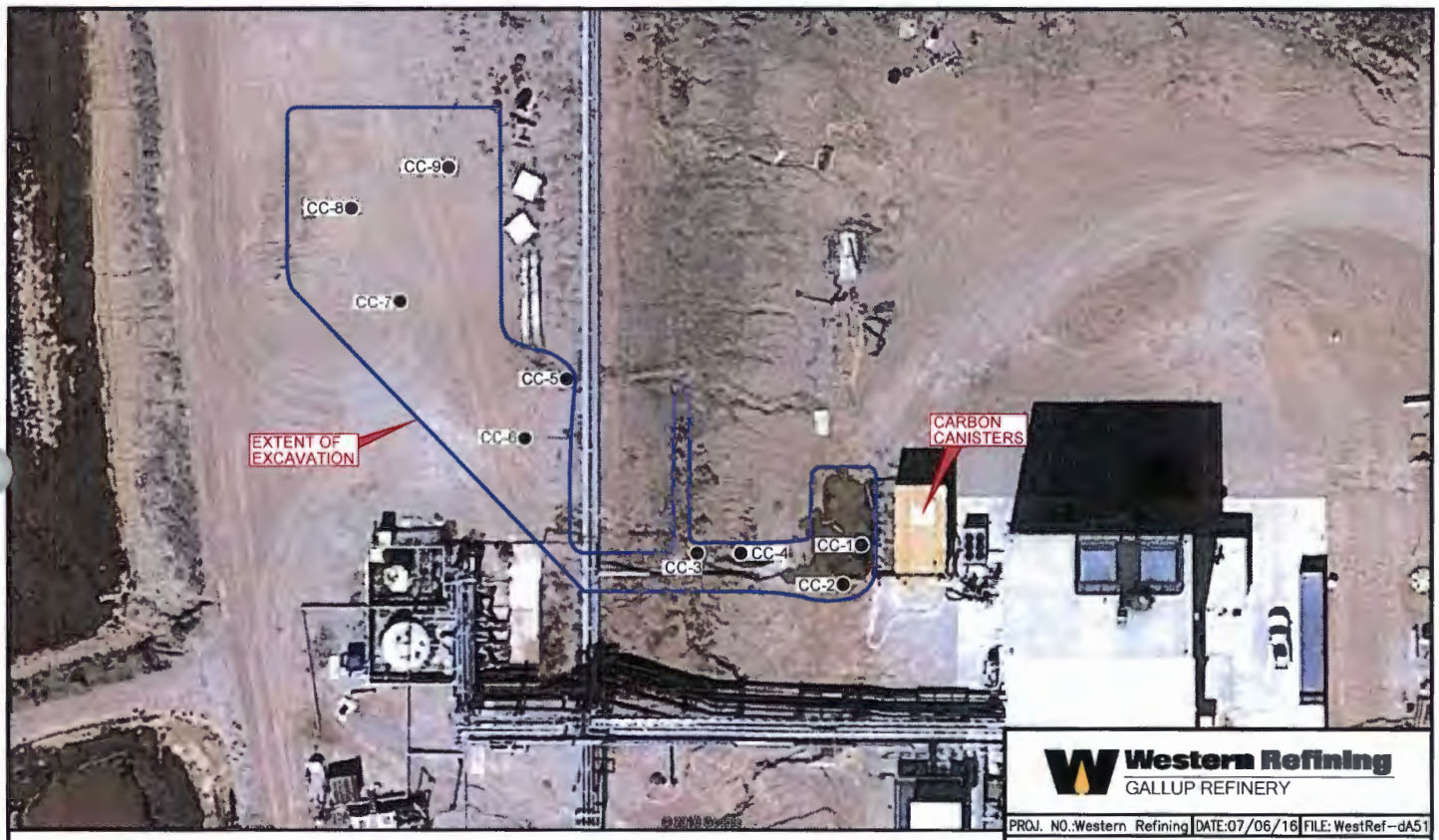
Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:07/06/16 | FILE:WestRef-dA49

FIGURE 3
EXTENT OF SPILL
WASTEWATER TREATMENT PLANT
CARBON CANISTER

DiSorbo
Environmental Consulting Firm

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



Aerial Source: Google Maps, 03/18/2016

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:07/06/16	FILE: WestRef-dA51

FIGURE 4

SOIL SAMPLING LOCATIONS
WASTEWATER TREATMENT PLANT

N

0 50
SCALE IN FEET

LEGEND

CC-1 ● SOIL SAMPLING LOCATION AND IDENTIFICATION NUMBER

EXTENT OF EXCAVATION

NEW MEXICO

QUADRANGLE LOCATION

DiSorbo
Environmental Consulting Firm

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

Appendix A

Western Refining – Gallup Refinery

Calculations of Volumes Released

Appendix A-1

Western Refining – Gallup Refinery

January 19, 2016 Internal E-Mail

Calculation of Volume Released

December 27, 2015 Release

Larsen, Thurman

From: Walters, Lucas
Sent: Tuesday, January 19, 2016 8:48 AM
To: Larsen, Thurman
Subject: RE: Carbon Canister Spill from Rupture Disk of 12-27-2015

Beck,
The calculation for the carbon canister leak was approached in the following manner:
Assumptions:

1) The carbon canister rupture disk ruptured immediately after the carbon canisters were put online. There is pressure indication on the inlet to the carbon canisters but does not reflect when the disk would have ruptured. With this in mind, the worst case scenario was taken into account. Time noted on operator log was 4:00 pm.
2) The flow was stopped immediately once the outside operator noticed the disk. Time noted on operator log was 4:35 pm.
3) Flow meter 84fc901 average for this time period was 190.3 GPm. It is the flow meter that goes to though both sets of filters and then the carbon canisters.

The maximum volume that could have leaked out of the rupture disk would be 190.3 GPM * 35 min = 6660.5 gallons or 158.5 barrels. Let me know if you need anything else.
Lucas

From: Walters, Lucas
Sent: Tuesday, January 19, 2016 8:27 AM
To: Larsen, Thurman
Subject: RE: Carbon Canister Spill from Rupture Disk of 12-27-2015

Give me about 20 minutes.
Lucas

From: Larsen, Thurman
Sent: Tuesday, January 19, 2016 8:18 AM
To: Walters, Lucas
Subject: Carbon Canister Spill from Rupture Disk of 12-27-2015

Lucas,
Do you have any calculations or any additional information to contribute that I could use concerning the carbon canister spill that occurred on 12-27-15 due to the rupture disk? I am working on a report to the agency.
Thanks,

Beck Larsen
Environmental Engineer
Western Refining Southwest (Gallup Refinery)
92 Giant Crossing Road - New Mailing Address
Gallup, NM 87301
Office: (505) 722-0258
cell: (505) 862-1749

Appendix A-2

Western Refining – Gallup Refinery

January 8, 2016 Interoffice Memorandum

Initial Calculation of Volume Released

January 7, 2016 Release

Western

INTEROFFICE
MEMORANDUM

Date: Friday, January 8, 2016

To: Andy Green, Process Safety Manager

From: Danyelle Montalvo, Process Engineer

Subject: **Carbon Canister Leak**

On 1/7/2016 at 11:00 PM a rupture disk on the south Carbon Canister failed causing water not filtered through the carbon canisters to spill onto the ground.

According to Pi Data, the disk ruptured around 10:37 and the total time was taken to be 19 minutes in which an average flow of 90 gpm was being pumped to the canisters. This equates to approximately 1710 gallons of water released which equals 43 barrels of water released.

At this time, I do not have compositional information about the benzene content of the water spilled but on 11/12/2015 I requested an analysis to be run on water from the waste water treatment plant before the carbon canisters. Results were as follows:

Benzene = 3.75365
Toluene = 2.40118
Ethylbenzene = 7.41332e-1
M,P xylene = 1.09132
O xylene = 1.09254

All results are in ppm.

If you have any questions please contact me at Danyelle.Montalvo@wnr.com or call me at (505) 726-9724.

Appendix A-3

Western Refining – Gallup Refinery

January 22, 2016 Internal Email

Revised Calculation of Volume Released

January 7, 2016 Release

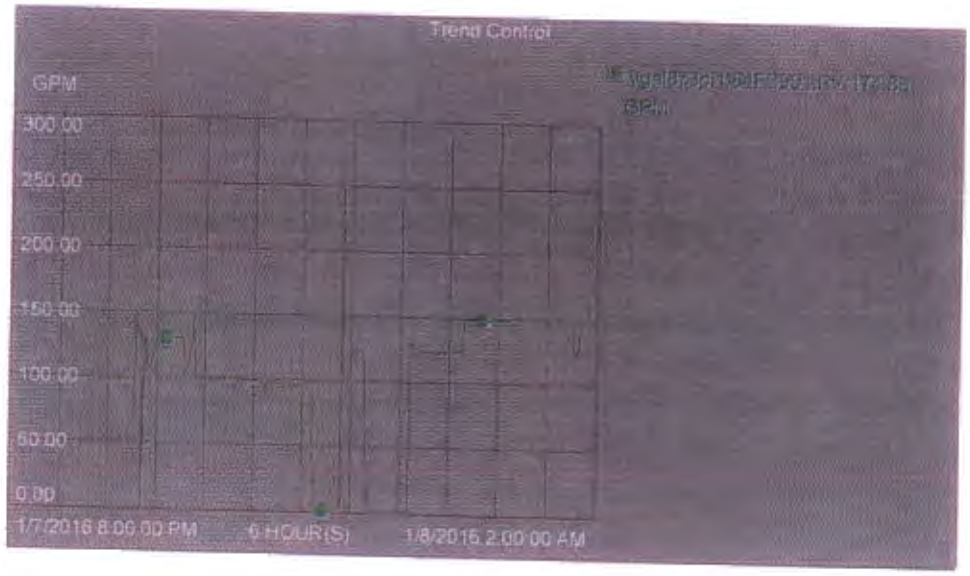
Larsen, Thurman

From: Montalvo, Danyelle
Sent: Friday, January 22, 2016 2:03 PM
To: Larsen, Thurman
Subject: Carbon Canister Calculations
Attachments: CarbonCanisterCalculations.xlsx

Beck,

Attached is the excel spreadsheet I used to calculate the volume of water released from the unit to the ground. My initial calculation was 1710 gallons of water using 90 gpm for 19 minutes. Upon reevaluation of the pi data, I determined the average flow rate during the time of the spill was 96.6 gpm for 20 minutes. This gives the total volume of water released to be 1932 gallons of water or 46 bbls. If you have any questions please let me know.

Thank you
Danyelle Montalvo


Trend Control
GPM
300.00
250.00
200.00
150.00
100.00
50.00
0.00
1/7/2016 8:00:00 PM
6 HOUR(S)
1/8/2016 2:00:00 AM

Time	Flow(GPM)
07-Jan-16 20:00:00	99.5802037
07-Jan-16 20:00:05	99.59661865
07-Jan-16 20:01:05	99.47885132
07-Jan-16 20:02:05	99.22166333
07-Jan-16 20:03:05	99.1255188
07-Jan-16 20:04:05	99.3905181[illegible]
07-Jan-16 20:05:05	99.23348099
07-Jan-16 20:06:05	99.1255188
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07-Jan-16 20:08:05	99.05682473
07-Jan-16 20:09:05	99.17459106
07-Jan-16 20:10:05	99.37068013
07-Jan-16 20:11:05	99.42077905
07-Jan-16 20:12:05	99.1255188
07-Jan-16 20:13:05	99.55773409
07-Jan-16 20:14:05	99.01750787
07-Jan-16 20:15:05	98.9690564
07-Jan-16 20:16:05	99.09606734
07-Jan-16 20:17:05	99.00275146
07-Jan-16 20:18:05	98.88098413
07-Jan-16 20:19:05	98.8114674
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07-Jan-16 20:21:05	98.98812866
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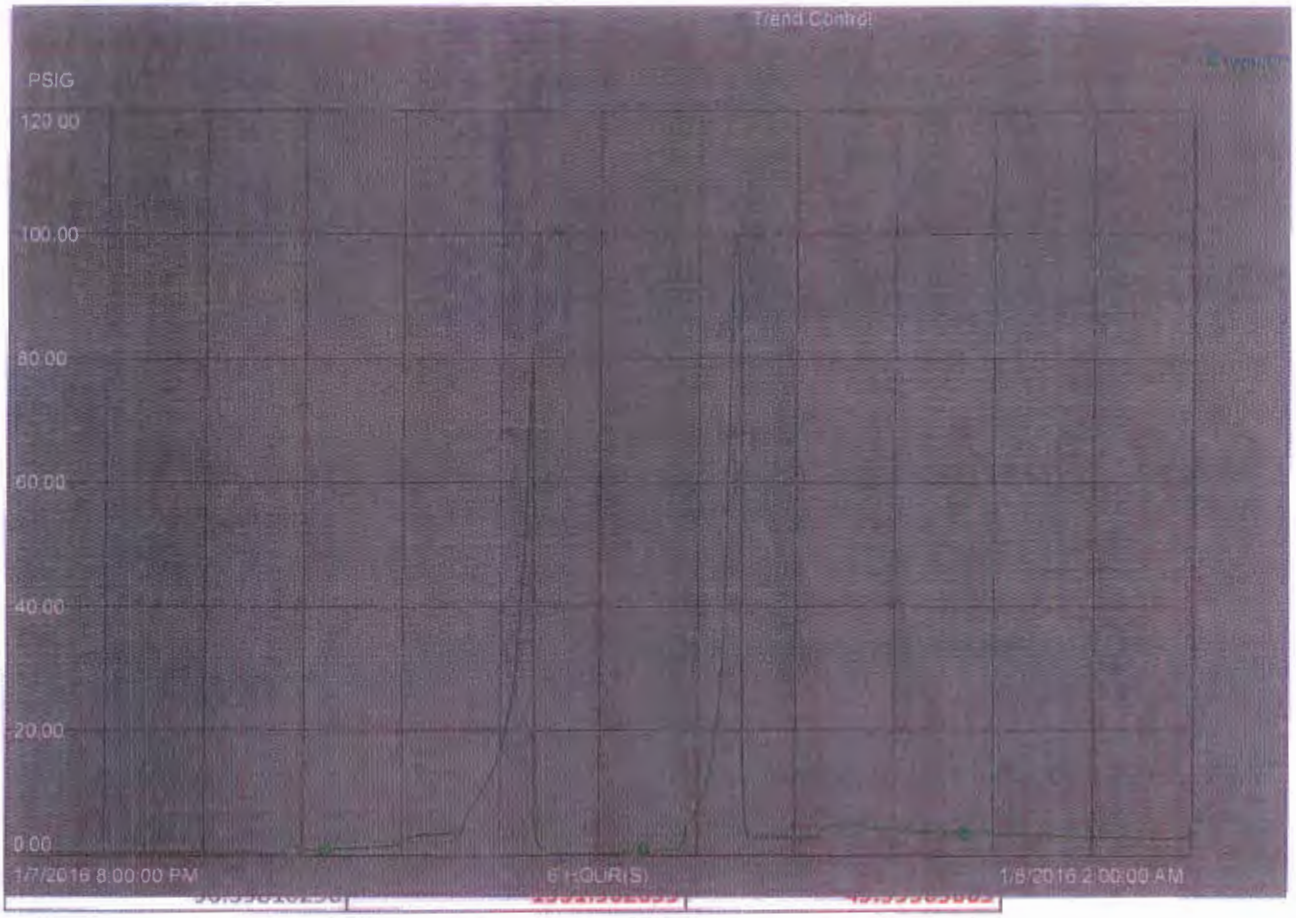

Second Pressure Peak

Maximum Value

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07-Jan-16 20:20:41	0.533289254
07-Jan-16 20:21:42	0.524344444
07-Jan-16 20:22:42	0.510355771
07-Jan-16 20:23:43	0.514760792
07-Jan-16 20:24:43	0.520901203
07-Jan-16 20:25:43	0.534126103
07-Jan-16 20:26:44	0.532879353
07-Jan-16 20:27:44	0.529427767
07-Jan-16 20:28:45	0.530697763
07-Jan-16 20:29:45	0.508969128
07-Jan-16 20:30:45	0.513064384
07-Jan-16 20:31:46	0.531973183
07-Jan-16 20:32:46	0.530560195
07-Jan-16 20:33:47	0.526147723
07-Jan-16 20:34:47	0.519681454
07-Jan-16 20:35:47	0.518573165
07-Jan-16 20:36:48	0.509730995
07-Jan-16 20:37:48	0.519506872

07-Jan-16 20:38:49	0.51776129
07-Jan-16 20:39:49	0.497544736
07-Jan-16 20:40:49	0.510489106
07-Jan-16 20:41:50	0.502424657
07-Jan-16 20:42:50	0.51094538
07-Jan-16 20:43:51	0.513933718
07-Jan-16 20:44:51	0.50822705
07-Jan-16 20:45:51	0.498425364
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07-Jan-16 20:49:53	0.481542081
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07-Jan-16 21:10:01	0.455470592
07-Jan-16 21:11:01	0.460829288
07-Jan-16 21:12:02	0.467746913
07-Jan-16 21:13:02	0.459346503
07-Jan-16 21:14:03	0.460585564
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08-Jan-16 01:18:40	3.140982389
08-Jan-16 01:19:40	3.120877028
08-Jan-16 01:20:41	3.108528614
08-Jan-16 01:21:41	3.077381372

DATE: 01/08/16 6:10am

	6:30AM-6:30PM	6:30PM-6:30AM
Shift Superintendent	Frank Hausner	Garry Moore
Offsites Shift Supervisor	Peter Tom	Rodney James

Western Refining
GALLUP REFINERY

120 Days Since Last OSHA Recordable Injury

%LVR	511a-Quick attack truck, 511a-south carbon canister rupture disk
103.91	
ENVIRONMENTAL:	
QUALITY:	
ESD/FALSE PV/PSV STATUS:	Closure for PSV 12 St. run line in treaters Closure in the RSMs office

STREAM	24 hr avg	Current	Plan
Crude Rate, BPD	**25,672**	**25,707**	25,700
Tank 101 Feed	13,565	13,379	13,600
Tank 102 Feed	11,800	12,000	11,800
Rerun Oil Feed	326	329	300
CDU Products, BPD	26,520	27,207	
OVHD Gas, SCFD	640	624	
LPG	531	619	
LSR Gasoline	2,468	2,817	
Naphtha	6,661	6,637	
Kero	4,550	4,549	
Diesel	1,750	1,748	
Column Bottoms	10,559	10,837	
FCCU Rate, BPD	**8,200**	**8,198**	8,200
Trans Mix Feed	-3	-3	0
Feed - Hot	4,937	4,805	
Feed - Cold	3,777	3,929	
Sponge Gas	1,096	990	
Cat Gasoline	5,286	5,332	
LCO	1,570	1,525	
Slurry To Storage	319	258	
Slurry Flash	110	111	
Riser Temperature (F)	938	938	938
Feed Temperature (F)	438	437	440
Catalyst Loaded (lbs/day)	6,000	1,498	6,000
Bypass Sulfur Analyzer Flue Gas (ppm)	41	2	500 MAX
ALKY Rate, BPD	**3,082**	**3,102**	
Alkylate Production	1,798	1,811	
Olefin feed	2,286	2,213	
Olefin feed from storage	107	107	100
IC4 feed	985	1,003	
Acid Strength (%)	97	97	
Contactor Temperature (F)	92	91	
Butane Production	386	373	
Propane to Storage (BPD)	567	466	
Platformer Rate, BPD	**6,560**	**6,598**	6,600
Octane (RON)	91.64	91.60	91.50
WAIT (F)	939	939	
Stabilizer Off Gas (KSCFD)	421	421	
Stabilizer LPG	255	246	
Platformate	5,497	5,529	
Rx Effluent Pressure (PSIG)	344	344	
H2 Recycle Rate (MMSCFD)	49	49	
Naphtha from storage	1,500	1,497	
NHT Rx Charge Rate	5,857	5,785	
NHT H2 Feed Rate (KSCFD)	3,400	3,398	
NHT Stripper LPG	725	575	
Sweet Naphtha to Storage	4	4	0
NHT Rx Delta T (In - Out)	15	15	
NHT Rx Delta P (In - Out)	17	17	
Plat Recycle H2 to oil Ratio (scf/bbl)	7	7	
Charge to MSAT Column (BPD)	0	0	
MSAT Light Naphtha (BPD)	0	0	
Off Gas to SATS(MSCFD)	348	306	

CONSTRAINTS
Meeting the Daily Plan
OPERATIONAL COMMENTS

CONSTRAINTS
Meeting the Daily Plan
OPERATIONAL COMMENTS

CONSTRAINTS
Pacing production.
OPERATIONAL COMMENTS
1. Maintenance recharged A-V41-on stand-by

CONSTRAINTS
Meeting Daily Plan
OPERATIONAL COMMENTS

STREAM	24 hr avg	Current	Plan
ULSD Feed Rate, BPD	**7,300**	**7,304**	7,300
DHT Feed	3,300	3,302	3,300
KHT Feed	4,000	4,002	4,000
DHT Feed % LCO	52.26%	57.86%	63%
Diesel from Tk-225	1,189	1,200	1300
Kerosene from Tk-226			0
D-V21 Rx Delta P (PSI)			
D-H1 Heater Temp (F)	724	725	
D-H2 Heater Temp (F)	620	620	
D-H3 Heater Temp (F)	724	725	
ULSD Bottoms Total	8,046	1,733	
DHT Recycle/Feed Ratio	2.2	2.2	
KHT Recycle/Feed Ratio	1.9	1.9	
[illegible]	10	7	10-12
SWAATS			
Amine Circulation (GPM)	34	34	
AM-V12 Surge Drum Lvl (%)	171	170	
[illegible]	-5	-5	
A.G. to SRU (KSCFD)	24	18	
SWS Feed Rate (GPM)	32	32	
Sour Water Tank Level (%)	39	39	
Amine A.G. to Thiosolv (KSCFD)	54	56	
Thiosolv A.G. to BN1 (lbs/hr)	375	383	
[illegible]	25	29	60 MAX
SATS, BPD			
Feed to Comp (MMSCFD)	1.06	0.97	
Inlet Liquids (BPD)	* 163	1,219	
Propane to Storage (BPD)	257	245	
Butane to Storage (BPD)	734	730	
Iso to Storage (BPD)	212	218	
Utilities, Mlbs/hr	**142**	**135**	
B-102	30	29	
B-104	15	14	
B-105	14	14	
B-106	40	35	
CO Boiler	44	43	
[illegible]	-5	-5	
[illegible]	30	18	150 MAX
[illegible]	43	43	
[illegible]	29	14	162 MAX
[illegible]	22	16	500 MAX
Purchased Nat Gas (MCFD)	5,520	5,497	

CONSTRAINTS

CONSTRAINTS

Meeting the Daily Plan

OPERATIONAL COMMENTS

CONSTRAINTS

Pacing production.

OPERATIONAL COMMENTS

CONSTRAINTS

Pacing production.

OPERATIONAL COMMENTS

1. Mechanics repaired S-C2-Back online.

CONSTRAINTS

OPERATIONAL COMMENTS

API/FLARE

WWTP Flow (GPM)	154	195
WWTP pH Before MPPE	7.7	7.7
[illegible]	5.8	6.6
[illegible]	0.00	0.00
	4:00 PM	4:00 AM
WWTP Tank 35 Level	16'-5"	19'-2"

1. Average flow= 170 gpm through the South Canister..Continue w/Flocc issues
2. Four Secondary filterschanged; (Tank 27=17' 2" & Tank 28=15'-10" @ 4pm)
3. Benzene: Scc=0.10 @ 8am; Scc=0.08 @ 12pm; Scc= @ 4pm.
4. Flow=200gpm thur north carbon canister. (T27=17'-2", T28=15'-10")
8.Filters: pm=1, Sec=2; Continue to have floc issues-maint. replaced z84 p61a pump
9.Benzene:8pm= 01, 12am= 01

TANK FARM / TRANSFERS

Rail Car Status

Ethanol / Toluene/Butane 1 Butane unloaded

CRUDE/FCC Feed/ ATS

Fuel Oil / LCO 3 Fuel Oil loaded

Loaded/ Unloaded 1 olefin

Crude N2 Tank Level (%)

GASOLINE TANKS CLEARED

ULSD TANK CLEARED

Pipeline Line Up	T101	T102
	West/east	east

1. RMF/ continues w/ repair work and ITI on inspecting.
2. Sun Fab completed the T-105 transfer line replacement. Flanges & Bolts were ping.
3. Tank 579(007) ULSD & Tank 582(013) 83.0 base are blending.
4.800 bbls of isobutane ordered from wingate at 7pm
5.T 582 is blendning
6. T-579 did pass PP=-15, 20 gal. added. FC @ 3:30am
7.BNSF in at 2am to switch out rail cars, area all clear

[illegible] Status

Day Shift Gycol/Gasoline Ck: ok

Night Shift Gycol/Gasoline Ck: ok

6AM - 6PM: VRU &Truck Rack ran fine; no issues.

* Loaded 2 Propane trucks; Received 1 Transmix; 2 Ethanol; & 1 jet fuel trucks today.

6PM-6AM: 2-transmix unloaded, 3-Ethanol unloaded.

Appendix B

Form C-141 Release Notification and Corrective Action

Appendix B-1

Form C-141 – Initial and Final Reports

December 27, 2015 Release

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Western Refining Southwest Inc.	Contact: Loretta Morgan
Address: I-40 Exit 39 Jamestown, NM 87347	Telephone No: 505-722-3833
Facility Name: Gallup Refinery	Facility Type: Oil Refinery

Surface Owner: Western Refining	Mineral Owner: Western Refining	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	23&33	15N	15W					McKinley

Latitude 35°29'22" **Longitude** 108°25'24"

NATURE OF RELEASE

Type of Release: Treated Wastewater	Volume of Release: Estimate 158 barrel of wastewater	Volume Recovered: Undetermined
Source of Release: Waste Water Treatment Plant Carbon Canister	Date and Hour of Occurrence: 12/27/2015 4:00 pm	Date and Hour of Discovery: 12/27/2015 4:00 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☒ Not Required	If YES, To Whom? Ruth Horowitz, NMED Hazardous Waste Bureau (phone call left message) Kristen VanHorn, NMED Hazardous Waste Bureau (phone call left message) Brandon Powell, Oil Conservation Division (phone call left message)	
By Whom? Loretta Morgan	Date and Hour: 12/27/2015 8:16 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. No, did not impact watercourse.	

If a Watercourse was Impacted, Describe Fully.
Not applicable

Describe Cause of Problem and Remedial Action Taken:
At approximately 4 pm on 12/27/2015, Wastewater Operators were back flushing the south carbon canister and wastewater was released from the rupture disk located on the outlet side of the canister due to a block valve downstream. Immediate action was taken to clean up the wastewater that was release. The Maintenance Department was called out to begin vacuuming up the area. Carbon canisters are located downstream of MPPE unit. The wastewater was treated prior to the release with no environmental impact or safety concerns. A benzene water sample was collected and it was found to be less than RCRA limit of 0.5 ppm.

Describe Area Affected and Cleanup Action Taken:
The Carbon Canisters are located on the west side of waste water treatment plant. Standing water was vacuumed up by Maintenance and contract personnel.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Beck Larsen	Approved by District Supervisor:	
Title: Environmental Engineer – Gallup Refinery	Approval Date:	Expiration Date:
E-mail Address: Thurman.Larsen@wnr.com	Conditions of Approval:	Attached ☐
Date: 1/8/2016 Phone: 505-722-0258		

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: WESTERN REFINING	Contact: Ed Riege
Address: I-40 / EXIT 39, JAMESTOWN,NM 87347	Telephone No.(505) 722-0217
Facility Name: WESTERN REFINING (GALLUP REFINERY)	Facility Type: Petroleum Refinery

Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

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

Latitude 35° 029' 024"__ **Longitude**__108° 024' 024"__

NATURE OF RELEASE

Type of Release: treated wastewater	Volume of Release > 158.5 bbls	Volume Recovered: undetermined
Source of Release: wastewater treatment plant carbon canister	Date and Hour of Occurrence 12/27/15 @ 1600 hrs	Date and Hour of Discovery 12/27/15 @ 1600 hrs
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? OCD (B. Powell); NMED (R Horowitz/K. VanHorn)	
By Whom? Loretta Morgan	Date and Hour: 12/27/15 2016 hrs	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Wastewater operators were back flushing the south carbon canister when wastewater was released from the rupture disk. A blocked valve downstream of the canister created pressure greater than 75 psi causing the rupture disk to rupture. Actions taken included the WWTP operators changing the flow from the south carbon canister to the north carbon canister. Maintenance was called out and vacuumed up the wastewater. Before the wastewater was spilled it had been treated by the carbon and a sample collected indicated the benzene was <.5 ppm. There were no safety or environmental concerns. (For additional information see the Response Action Report dated August 2016.)

Describe Area Affected and Cleanup Action Taken.*
The carbon canisters are located on the west side of the WWTP. The wastewater filled the earthen dike containment and overflowed allowing the wastewater to travel to the west downhill toward Pond EP-1. The wastewater did not reach EP-1. The standing wastewater was vacuumed with a Vac truck. On January 11, 2016, 2 to 3 inches of soil was removed from the area north of the containment structure and the lower level. (For drawings, photos, analytical and a full report see the Response Action Report dated August 2016.)

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

Signature: Ed Riege Printed Name: Ed Riege	OIL CONSERVATION DIVISION Approved by Environmental Specialist:	
Title: Remediation Manager	Approval Date:	Expiration Date:
mail Address: ed.riege@wnr.com Date: 8/24/2016 Phone: (505) 722-0217	Conditions of Approval:	Attached ☐

* Attach Additional Sheets If Necessary

Appendix B-2

Form C-141 Initial and Final Reports

January 7, 2016 Release

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: WESTERN REFINING	Contact: Beck Larsen
Address: I-40 / EXIT 39, JAMESTOWN,NM 87347	Telephone No.(505) 722-0258
Facility Name: WESTERN RENINING (GALLUP REFINERY)	Facility Type: Petroleum Refinery

Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

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

Latitude 35° 029' 024" **Longitude** 108° 024' 024"

NATURE OF RELEASE

Type of Release: Untreated Wastewater	Volume of Release- 40-46 bbls (1680 - 1710 gal) (untreated wastewater)	Volume Recovered: 32-34 bbl (1342-1428 gal) (untreated wastewater)
Source of Release: Slop Oil Transfer Line from T-107/108 to API	Date and Hour of Occurrence 1/7/2016; 2300 hrs	Date and Hour of Discovery 1/7/2016; 2320 hrs
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? OCD (Brandon Powell, Msg) / NMED HWB (Kristen Van Horn, Msg)	
By Whom? Cheryl Johnson	Date and Hour: 1/8/2016 (1536; 1539)	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

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

Describe Cause of Problem and Remedial Action Taken.* At 2300 hours on January 7, 2016, the south carbon canister rupture disk at the Wastewater Treatment Plant over-pressured allowing approximately 40 to 46 bbls of untreated wastewater to be released, filling the earthen dike containment and the excess overflow ran downhill toward Pond (EP-1) but did not reach EP-1. The incident lasted for about 20 minutes. Wastewater Treatment Plant Operators immediately upon discovery changed from the south carbon canister to the north carbon canister. Since the incident occurred at night and the area was covered with snow, assessment of the extent of the contamination was not completed until the next morning.

Describe Area Affected and Cleanup Action Taken.* On January 8, a vacuum truck began to remove the untreated wastewater from the affected area at the Wastewater Treatment Plant around the carbon canister containment area and the sloping downhill area. A sample was collected of the liquid and sent to our internal onsite laboratory. The results showed that the wastewater had a benzene level that exceeded the 0.5 ppm Regulatory Limit. The vacuum truck removed about 27 bbls from the containment area and an additional 5 to 7 bbls on the downhill slope side west of the carbon canisters. Soil samples were collected and sent to outside laboratory for analysis. Analytical results are still pending. About 2 to 3 inches of soil was removed on the downhill slope west of the carbon canisters.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Beck Larsen:	Approved by Environmental Specialist:	
Title: Environmental Engineer	Approval Date:	Expiration Date:
E-mail Address: Thurman.larsen@wnr.com	Conditions of Approval:	Attached ☐
ate: 1/22/16 Phone: (505) 722-0258		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: WESTERN REFINING	Contact: Ed Riege
Address: I-40 / EXIT 39, JAMESTOWN,NM 87347	Telephone No.(505) 722-0217
Facility Name: WESTERN REFINING (GALLUP REFINERY)	Facility Type: Petroleum Refinery

Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

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

Latitude 35° 029' 024"__ **Longitude**__108° 024' 024"__

NATURE OF RELEASE

Type of Release: Partially treated wastewater	Volume of Release 46 bbls	Volume Recovered: 32-34 bbls
Source of Release: wastewater treatment plant carbon canister	Date and Hour of Occurrence 1/7/16 @ 2300 hrs	Date and Hour of Discovery 1/7/16 @ 2320 hrs
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? OCD (B. Powell Msg.); NMED (K. VanHorn Msg.)	
By Whom? Cheryl Johnson	Date and Hour: 1/8/16 1536, 1539 hrs	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Wastewater operators were back flushing the south carbon canister when wastewater was released from the rupture disk. A blocked valve downstream of the canister created pressure greater than 75 psi causing the rupture disk to rupture. Actions taken included the WWTP operators changing the flow from the south carbon canister to the north carbon canister. Maintenance was called out and vacuumed up the wastewater the following morning. . Before the wastewater was spilled it had been treated by the DGF unit but not by the carbon filtration, and a sample collected indicated the benzene was >.5 ppm. There were no safety concerns. (For additional information see the Response Action Report dated August 2016.)

Describe Area Affected and Cleanup Action Taken.* The carbon canisters are located on the west side of the WWTP. The wastewater filled the earthen dike containment and overflowed allowing the wastewater to travel to the west downhill toward Pond EP-1. The wastewater did not reach EP-1. The standing wastewater was vacuumed with a vac truck on January 8. The vac truck removed about 27 bbls from the containment area and an additional 5 to 7 bbls from the area downhill of the carbon canisters. On January 11, 2016, 2 to 3 inches of soil was removed from the area north of the containment structure and the lower level. (For drawings, photos, analytical and a full report see the Response Action Report dated August 2016.)

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ed Riege	Approved by Environmental Specialist:	
Title: Remediation Manager	Approval Date:	Expiration Date:
mail Address: ed.riege@wnr.com	Conditions of Approval:	Attached ☐
Date: 8/24/2016 Phone: (505) 722-0217		

* Attach Additional Sheets If Necessary

Appendix C

Analytical Data – Released Material

Appendix C-1

Western Refining – Gallup Refinery

December 28, 2015 Internal E-Mail

Benzene Results - December 27, 2015 Release

Larsen, Thurman

From: Neumann, Maribel
Sent: Monday, December 28, 2015 12:45 PM
To: Larsen, Thurman
Cc: Walters, Lucas
Subject: Canister Spill 122715
Attachments: Canister Spill 122715.pdf

Attached is the Benzene result for the Canister Spill. The result is 0.45. If you have any questions please let me know. Jesse Lawrence will be running the chloride testing.

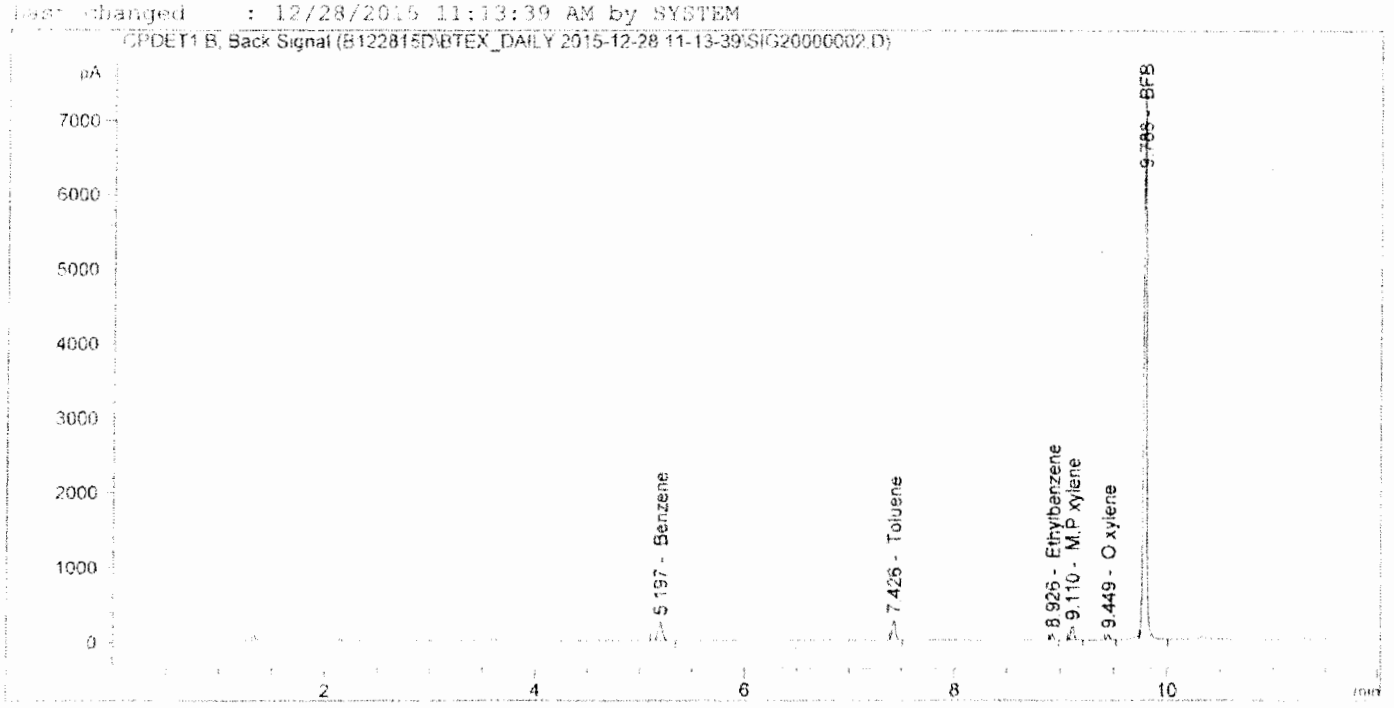
Thanks,
Maribel Neumann
Laboratory Technician
Western Refining-Gallup

Data File C:\CHEM32\1\DATA\B122815D\BTEX_DAILY 2015-12-28 11-13-39\SIG20000002.D
Sample Name: Canister Spill 122715 pH 7.7

Acq. Operator : SYSTEM
Acq. Instrument : Purge and Trap
Injection Date : 12/28/2015 11:52:33 AM

Seq. Line : 2
Location : Vial 3
Inj : 1
Inj Volume : Manually

Method : C:\CHEM32\1\DATA\B122815D\BTEX_DAILY 2015-12-28 11-13-39\BTEX.M (Sequence Method)
Last changed : 12/28/2015 11:13:39 AM by SYSTEM



Internal Standard Report

Sorted By : Signal
Calib. Data Modified : Wednesday, November 18, 2015 11:53:12 AM
Multiplier : 50.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ppm]	Name
1	100.00000	BFB

Signal 1: CPDET1 B, Back Signal

RetTime [min]	Type	ISTD used	Area [pA*s]	Amt/Area ratio	Amount [ppm]	Grp	Name
5.197	BB	1	713.48334	1.82544e-3	4.53296e-1		Benzene 0.45
7.426	BB	1	563.16870	0.00000	0.00000		Toluene
8.926	BB	1	164.85704	0.00000	0.00000		Ethylbenzene
9.110	BB	1	411.93872	0.00000	0.00000		M,P xylene
9.449	BB	1	147.29042	0.00000	0.00000		O xylene

Data File C:\CHEM32\1\DATA\B122815B\STEX_DAILY 2015-12-28 11-13-39\SIC20000002.D
Sample Name: Canister Spill 122715 pg 7.7

RetTime [min]	Type	ISTD used	Area [pA*s]	Amt/Area ratio	Amount [ppm]	Grp	Name
9.768	VB S	I	1 1.43661e4	1.00000	100.00000		RFB

Totals without ISTD(s) : 4.53296e-1

% Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Negative results set to zero (cal. curve intercept), (Toluene)
Warning : Negative results set to zero (cal. curve intercept), (Ethylbenzene)
Warning : Negative results set to zero (cal. curve intercept), (M,P xylene)
Warning : Negative results set to zero (cal. curve intercept), (O xylene)

*** End of Report ***

Appendix C-2

Western Refining – Gallup Refinery

January 8, 2016 Interoffice Memorandum

Transmittal of WWTP Analytical Results

November 12, 2015

Western

INTEROFFICE
MEMORANDUM

Date: Friday, January 8, 2016

To: Andy Green, Process Safety Manager

From: Danyelle Montalvo, Process Engineer

Subject: **Carbon Canister Leak**

On 1/7/2016 at 11:00 PM a rupture disk on the south Carbon Canister failed causing water not filtered through the carbon canisters to spill onto the ground.

According to Pi Data, the disk ruptured around 10:37 and the total time was taken to be 19 minutes in which an average flow of 90 gpm was being pumped to the canisters. This equates to approximately 1710 gallons of water released which equals 43 barrels of water released.

At this time, I do not have compositional information about the benzene content of the water spilled but on 11/12/2015 I requested an analysis to be run on water from the waste water treatment plant before the carbon canisters. Results were as follows:

Benzene = 3.75365
Toluene = 2.40118
Ethylbenzene = 7.41332e-1
M,P xylene = 1.09132
O xylene = 1.09254

All results are in ppm.

If you have any questions please contact me at Danyelle.Montalvo@wnr.com or call me at (505) 726-9724.

Appendix D

Western Refining – Gallup Refinery

Standard Operating Procedures Backwashing the Carbon Canister to Reduce Pressure on the Vessel

Western Refining GALLUP REFINERY

BACKWASHING THE CARBON CANISTER TO REDUCE PRESSURE ON THE VESSEL

PURPOSE

1. The purpose of this procedure is to inform the WWTP Operator how to safely, and effectively, backwash the WWTP carbon canisters when the canisters begin to pressure up. This backwash will remove deposits that have accumulated on top of the carbon bed and improve water flow through the carbon bed.

REFERENCE MATERIAL

1. Evoqua Water Technologies Tech Note No. 29

MINIMUM PERSONNAL

1. WWTP Operator

SAFETY EQUIPMENT

1. Standard refinery PPE including, but not limited to:
   a. Hard hat
   b. Steel toe boots
   c. Fire resistant coveralls
   d. Personal H2S monitor
   e. Safety glasses/goggles
   f. Leather gloves
   g. Face shield

EQUIPMENT INVOLVED

1. WWTP Carbon Canisters
2. WWTP PLC
3. Carbon canister backwash hose to STP-1.
4. Carbon Canister Pressure Transmitter

OBJECTIVE:

1. The objective of this procedure is to safely, and effectively, backwash the WWTP carbon canisters to alleviate pressure buildup in the vessel. This backwash should be conducted when the pressure on the vessels exceeds 35 PSI. The backwash of the carbon bed removes deposits from the carbon bed that can harden and impede the effluent flow through the carbon bed.

PRE-REQUISITES/PRE-CAUTIONS

1. **Prior to the backwash, verify that the correct valve lineup is in effect to make a backwash possible. This lineup is reflected in this procedure.**
2. **Caution: While conducting a backwash, pay attention to the pressure on the carbon canisters to avoid over-pressuring the vessels and busting a rupture disk. There is local pressure indication (a digital gauge) located on the inlet piping directly southeast of the canisters. The pressure is also displayed on the WWTP PI screen in the Control Room. The rupture disks are set to bust at 75 PSI.**

PROCEDURE:

1. When the pressure on the carbon canisters exceeds 35 PSI, prepare to conduct a backwash on the carbon canister that the flow is **first** being routed to if the canisters are in lead/lag. (This is the canister that will have deposits accumulated on top of the carbon bed that will impede water flow through the bed.)
2. Start off with a low flow rate (100 GPM).
3. A carbon canister backwash lineup is achieved by using the following valve lineup:
   a. Line up the WWTP effluent, first, to the carbon canister that is not being backwashed. The valve should be opened to allow effluent to travel to the top of the canister that is not being backwashed.
   b. Close the valve behind the manifold to keep effluent from traveling to STP-1.
   c. Once the STP-1 valve is closed, open the two valves on the very bottom of the manifold to allow the flow to travel from the bottom of one canister to the bottom of the canister that is being backwashed.
   d. Close the valve that accesses the middle piping of the manifold or the flow will not go to the other canister; it will go directly to the backwash hose to STP-1.
   e. The flow will travel from the bottom of one canister to the bottom of the backwash canister and out the top of this canister. This backwash will remove any deposits that have accumulated on top of the carbon bed while this vessel was in service.
   f. Open the valve on the manifold to allow the flow to travel out of the top of the backwash canister and into the middle pipe on the manifold that accesses the backwash hose.
   g. Open the valve that goes to the backwash hose.
   h. Open the valve at the end of the backwash hose to allow flow to travel to STP-1.

4. Closely monitor the pressure of the carbon canisters to avoid busting the overpressure rupture disks (75 PSI max.) on the carbon canister manifold.
5. Slowly bring up the flow to 200 GPM to "fluff" the carbon bed and allow bed expansion for optimum carbon performance.
6. Run this backwash for at least an hour to cleanse and fluff the carbon bed thoroughly.
7. After the backwash, return the valve lineup to its original configuration and flow through one canister only until the benzene levels reach critical level, then put the canisters into lead-lag.

The unit operator has full authority to shut down unit during any unsafe conditions.

DATE	NAME	SIGNATURE

Appendix E

Waste Manifest

NON-HAZARDOUS WASTE MANIFEST

(Designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NMD000333211

Manifest Document No. D 107576

2. Page 1 of 1

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

4. Generator's Phone 505 722 0258

5. Transporter 1 Company Name: Advanced Chemical Transport Inc. (SV)

6. US EPA ID Number: CAR000070540

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
Gandy Marley, Inc
Section 4,5,8 & 9 of T11S, R31E NMPM
Chavez County, NM 88202

10. US EPA ID Number: NON HAZ

E. State Facility's ID

F. Facility's Phone

GENERATOR

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-RCRA/Non-DOT Regulated Material Solid (petroleum contaminated soil from carbon cannister)	1	CM	4.0	Y R EV
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
Project Number 91853 Document #: D107576

1) CARBONCNSTR WEG-_____

24 hour emergency contact: CHEMTREC 800-424-9300

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Bin 104052

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

Printed/Typed Name: ALVIN DOTSON EV ~~EUGENE VIGIL~~ — Signature: Alvin D — Date: Month 03 Day 02 Year 16

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: EUGENE VIGIL — Signature: E Vigil — Date: Month 03 Day 02 Year 16

18. Transporter 2 Acknowledgement of Receipt of Materials

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

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in Item 19. 10:33 AM

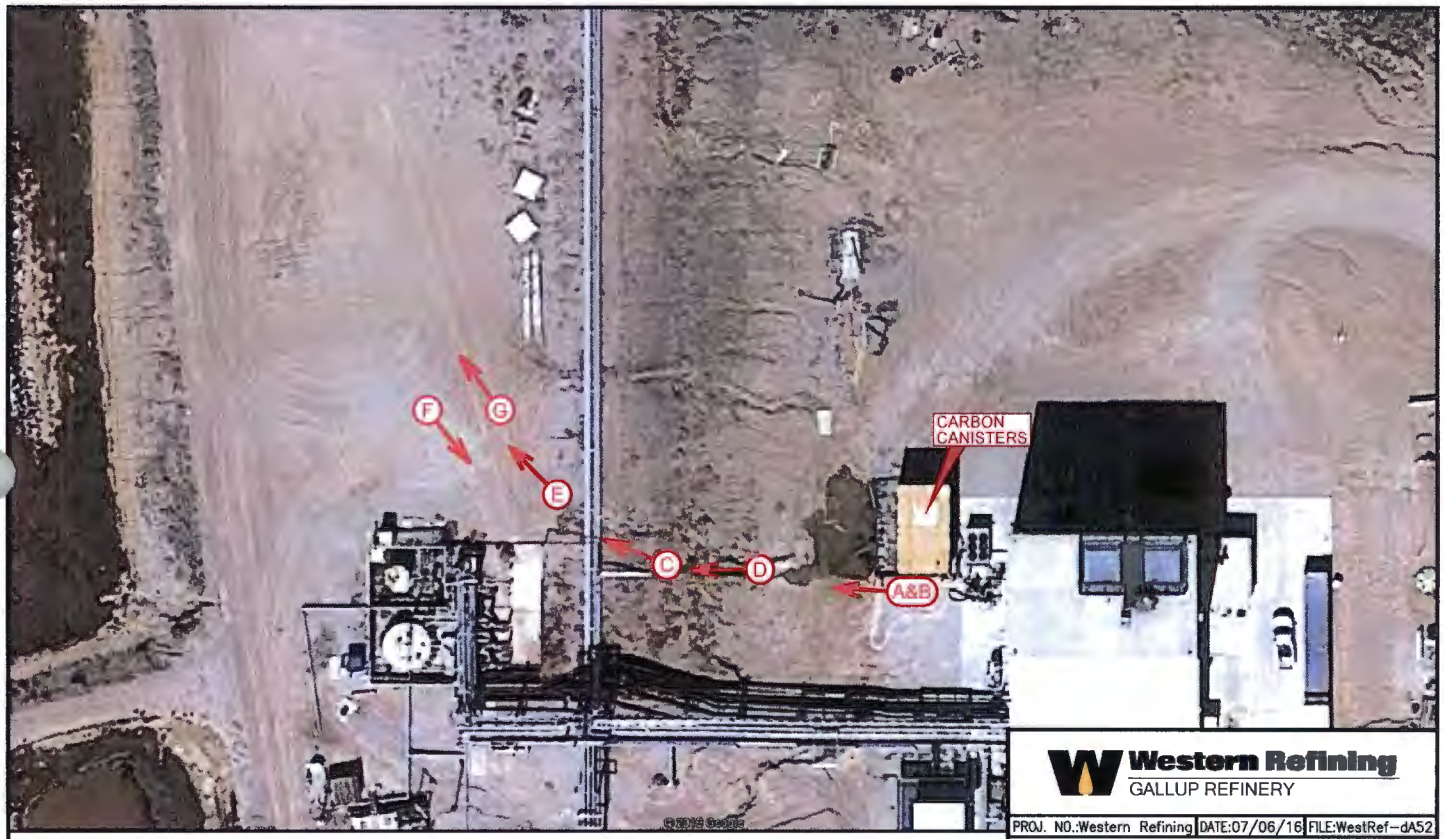
Printed/Typed Name: J TULTON — Signature: J Tulton — Date: Month 03 Day 03 Year 16

NON-HAZARDOUS WASTE

CF14 © 2002 LABELMASTER® (800) 621-5808 www.labelmaster.com

Appendix F

Photographs



Aerial Source: Google Maps, 03/18/2016

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:07/06/16	FILE:WestRef-dA52

PHOTOGRAPH LOCATIONS
WASTEWATER TREATMENT PLANT

0 50
SCALE IN FEET

LEGEND

E — PHOTOGRAPH IDENTIFICATION (LOCATION AND DIRECTION OF VIEW)

NEW MEXICO

QUADRANGLE LOCATION

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

Photo A looking west

Photo B looking west

Photo C looking west-northwest

Photo D looking west

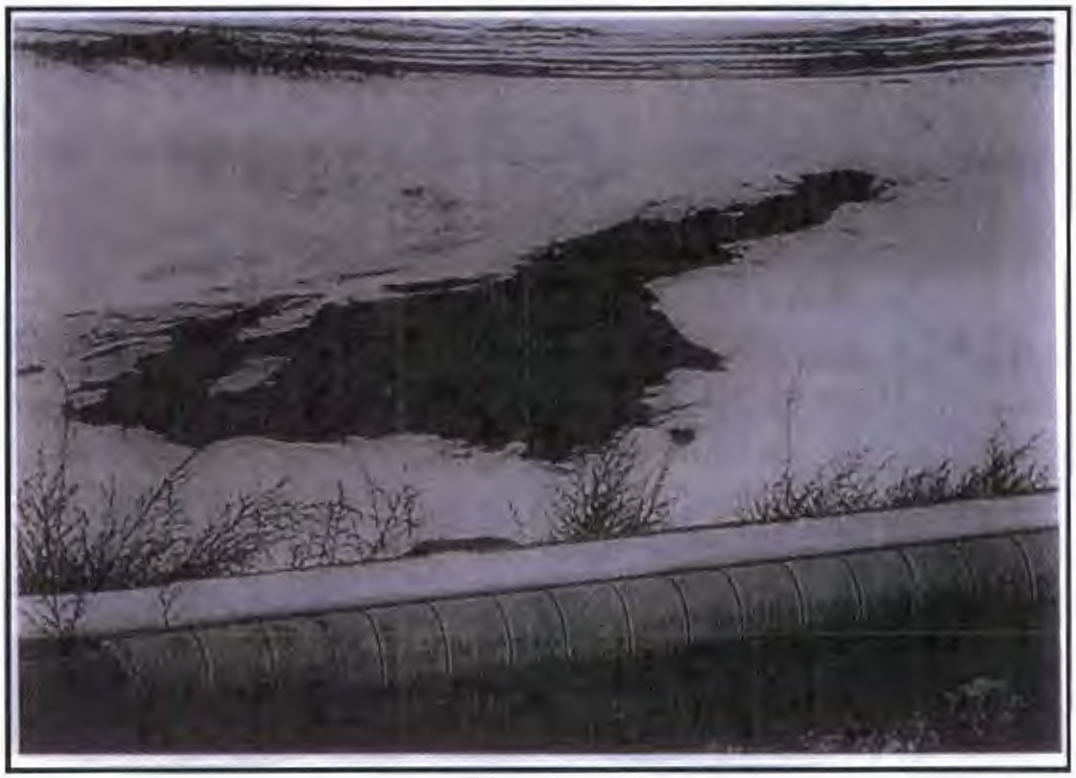


Photo E looking northwest

Photo F looking southeast

Photo G looking northwest

Appendix G

Field Methods

Appendix G

Field Methods

The following procedures are to be followed during sampling collection:

The soil sampling kit (Method 5035) for Volatile Organics Analysis (8260, 8021, & 8015) are to be used and consist of the following components:

1) Methanol Kit - One labelled paper envelope that contains two vials preserved with methanol and a plastic syringe.

2) Sodium Bisulfate Kit - One labelled quart sealable bag that contains two 40-ml VOA vials preserved with sodium bisulfate and placed in bubble wrap sleeve. A plastic syringe is also included.

3) One 8-oz glass jar.

Sampling procedures included:

Methanol Kit – Using new gloves take the syringe and collect 10 CCs of soil and extrude into one of the vials. Collect and extrude 10 CCs into the second vial and place both vials in the paper envelope. Seal the envelope flap with clear tape. Fill out the label with the date and time the sample was collected and the sampler's name/initials. The project location should be included on the label. All labels will be competed with waterproof ink and covered with clear tape. Place the paper envelope in a quart sealable bag. Place the quart bag in a gallon sealable bag.

Sodium Bisulfate Kit – Using new gloves, if necessary, take the syringe and collect 4 CCs of soil and extrude into one of the vials. Collect and extrude 4 CCs into the second vial and place both vials in the bubble wrap and then in the quart sealable bag. Fill out the label on the quart sealable bag and cover with clear tape. Place in the gallon sealable bag.

8-oz Jar/Teflon Lined Lid - Using new gloves, if necessary, and a clean trowel or sampling knife, fill the 8-oz jar completely with soil and seal with the lid. Fill out the label and cover with clear tape. Place the jar in bubble wrap and then in the gallon sealable bag.

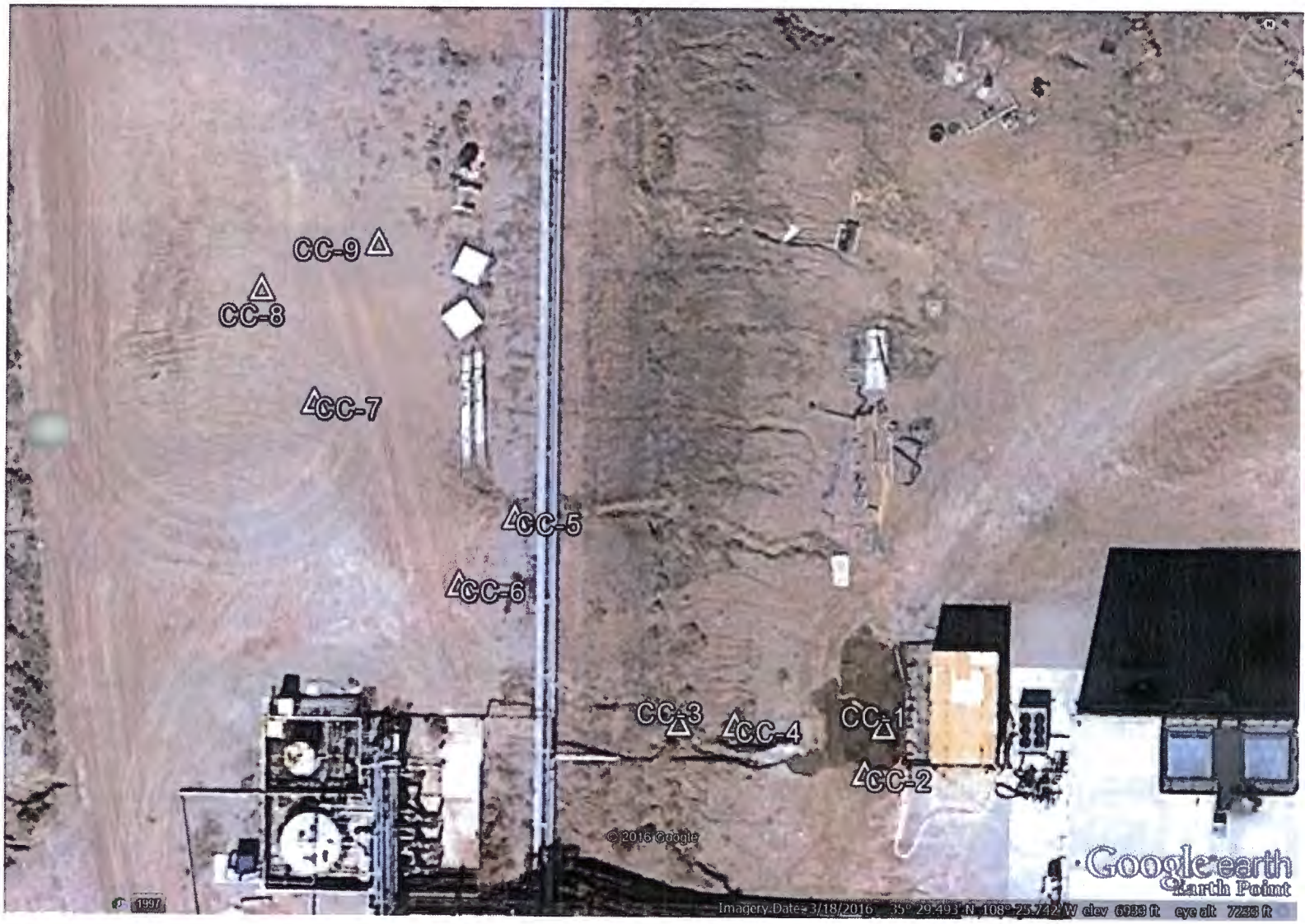
If additional analyses such as metals or semivolatile organics are required, then an additional 8-oz jar must be collected.

The bags will be placed into a cooler filled with ice. The sampling location and sampling time will be recorded on the field log and the chain-of-custody form. All samples are to be kept on ice until delivered by hand to the laboratory.

The sample containers were secured in bubble wrap and then placed in new sealable bags. The bags will be placed into a cooler filled with ice packed in sealable bags. All samples were kept cold (at 4°C or below) and delivered by hand, transported to the laboratory.

Appendix H

Soil Sampling Logs


CC-9
CC-8
CC-7
CC-5
CC-6
CC-3
CC-4
CC-1
CC-2
© 2016 Google
Google earth
Earth Point
1997
Imagery Date: 3/18/2016 35° 29.493' N 108° 25.742' W elev 6933 ft eye alt 7236 ft

Western Refining SW, Inc. - Gallup Refinery

Project Name	Boring Number	Sample Date	Sample Time	Logged and Sampled By:
WWTP-CARBON CANISTER	WWTP-CC-5	6.14.16	1030	TRACY PAYNE

Total Depth	GPS Coordinates
6"	N35°29.491' W108°25.750'

Current Precipitation: None Drizzle Light Moderate Heavy Continuous Intermittent

Estimated Wind Speed: Slight Moderate Strong Very Strong

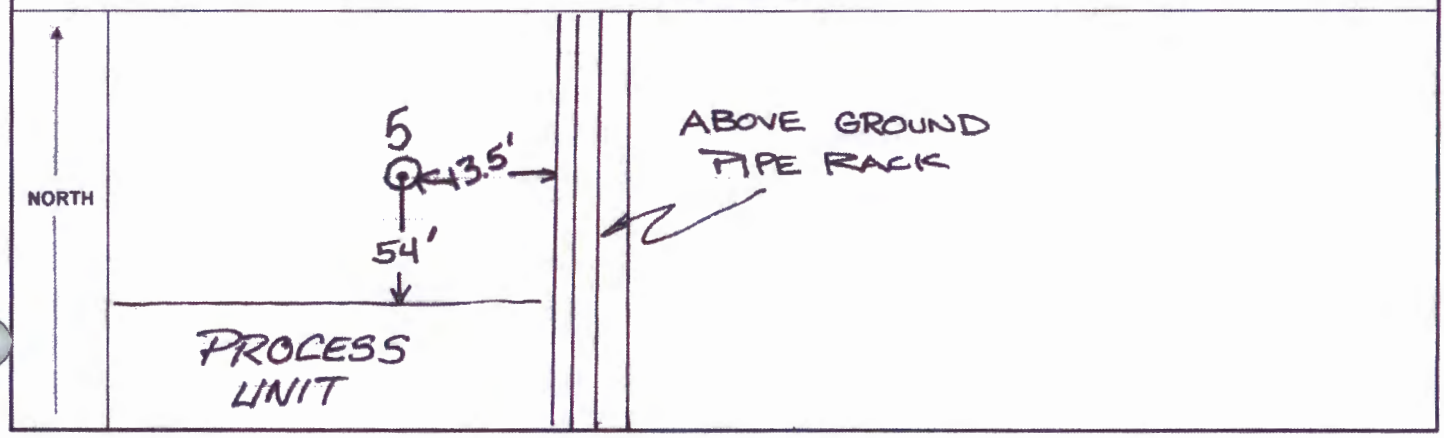
Temperature 68° Clear? Cloudy?

Comments: USED HAND AUGER TO COLLECT SOIL SAMPLE

PID Readings		Sample Disposition						
Interval (feet)	Results (ppm)	Sample Depth (feet bgl)	Sample Type	No. & Container Type	Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology / Sediments
—	—	0-6" 1030	G	3J 4V	0-6"	ML	100	GRAVELLY SILT - FINE GRAIN, LOOSE, DRY, BROWN, NO ODOR

NO.	PHOTO LOG - DESCRIPTION
	NO PHOTOS

FIELD DIAGRAM



Western Refining SW, Inc. - Gallup Refinery

Project Name	Boring Number	Sample Date	Sample Time	Logged and Sampled By:
WWTP CARBON CANISTER	WWTP-CC-6	6.14.16	1045	TRACY PAYNE

Total Depth	GPS Coordinates
6"	N35° 29.488' W108° 25.753'

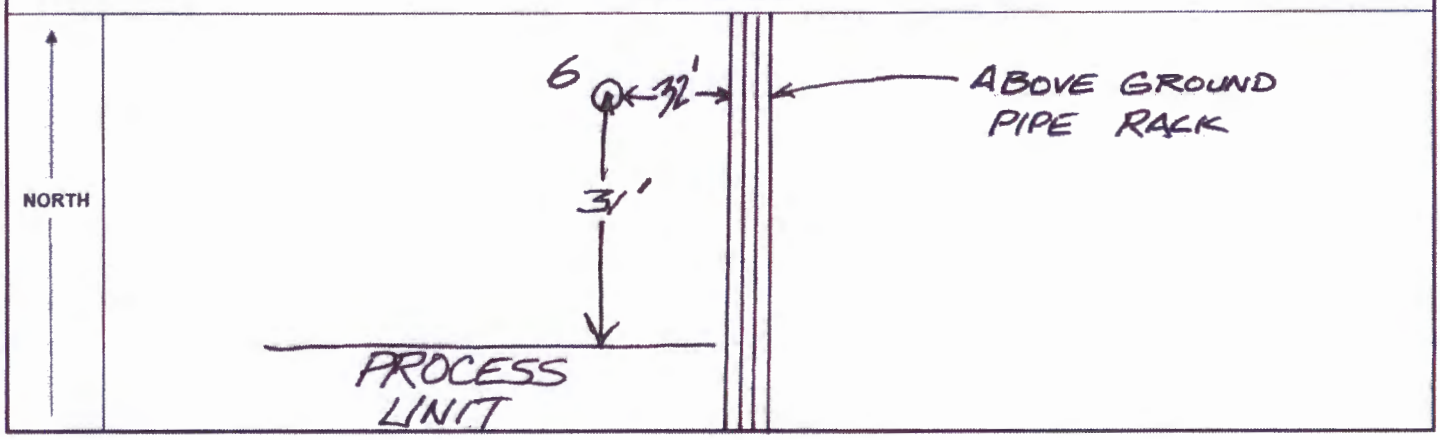
Current Preciptation	Estimated Wind Speed:	Temperature
None Drizzle Light Moderate Heavy Continuous Intermittent	Slight Moderate Strong Very Strong	68° Clear? Cloudy?

Comments

PID Readings		Sample Disposition			Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology / Sediments
Interval (feet)	Results (ppm)	Sample Depth (feet bgl)	Sample Type	No. & Container Type				
—	—	0-6"	G	3J	0-6"	ML	100	GRAVELLY SILT - FINE, LOOSE, DRY,
		1045		4V				BROWN, ODOR

NO.	PHOTO LOG - DESCRIPTION
	NO PHOTOS

FIELD DIAGRAM



Western Refining SW, Inc. - Gallup Refinery

Project Name	Boring Number	Sample Date	Sample Time	Logged and Sampled By:
WWTP CARBON CANISTER	WWTP-CC-7	6.14.16	1105	TRACY PAYNE

Total Depth	GPS Coordinates
6"	N35°29.496' W108°25.761'

Current Preciptation	Estimated Wind Speed:	Temperature
None Drizzle Light Moderate Heavy Continuous Intermittent	Slight Moderate Strong Very Strong	73° Clear? Cloudy?

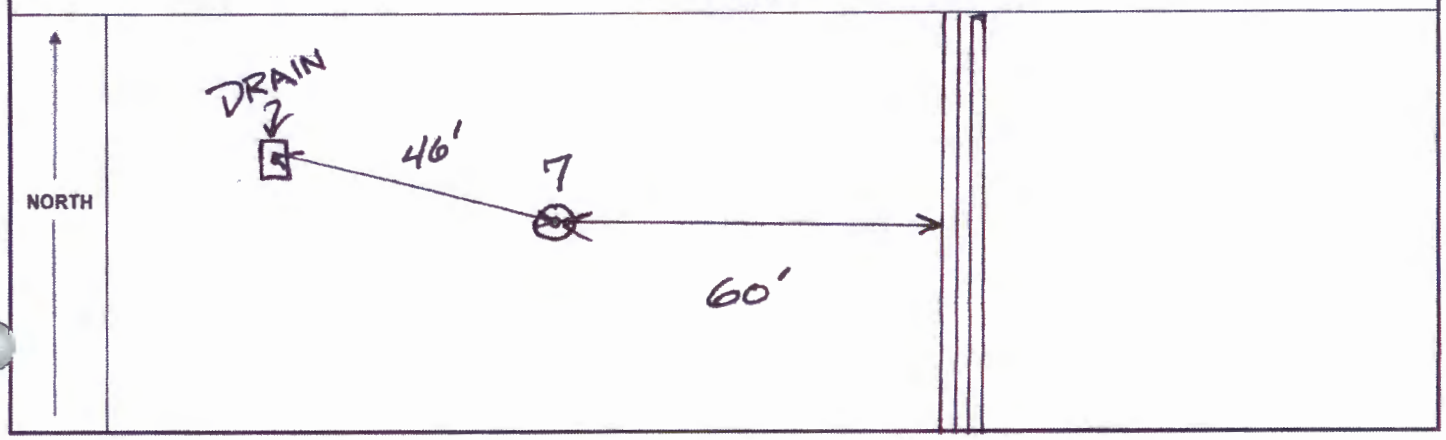
Comments

USED HAND AUGER TO COLLECT SOIL SAMPLE

PID Readings		Sample Disposition						
Interval (feet)	Results (ppm)	Sample Depth (feet bgl)	Sample Type	No. & Container Type	Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology / Sediments
		0-6"	G	3J 4V	0-6"	ML	100	GRAVELLY SILT - V. FINE, LOOSE, DRY, BROWN, NO ODOR

NO.	PHOTO LOG - DESCRIPTION
	NO PHOTOS

FIELD DIAGRAM



Western Refining SW, Inc. - Gallup Refinery

Project Name	Boring Number	Sample Date	Sample Time	Logged and Sampled By:
WWTP CARBON CANISTER	WWTP-CC-8	6.14.16	1135	TRACY PAYNE

Total Depth	GPS Coordinates
6"	N35° 29.501' W108° 25.764'

Current Precipitation	Estimated Wind Speed:	Temperature
None Drizzle Light Moderate Heavy Continuous Intermittent	Slight Moderate Strong Very Strong	73° Clear? Cloudy?

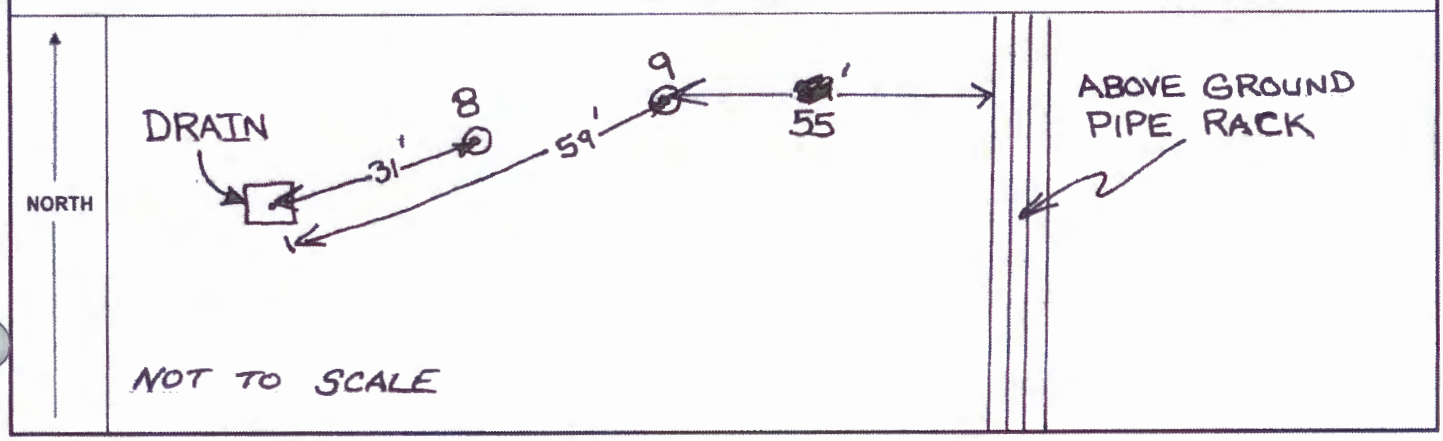
Comments

USED HAND AUGER TO COLLECT SOIL SAMPLE

PID Readings		Sample Disposition						
Interval (feet)	Results (ppm)	Sample Depth (feet bgl)	Sample Type	No. & Container Type	Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology / Sediments
—	—	0-6" 1135	G	3,J 4V	0-6"	ML	100	GRAVELLY SILT - VERY FINE GRAIN, COMPACT TO LOOSE, DRY, BROWN, NO ODOR

NO.	PHOTO LOG - DESCRIPTION
	NO PHOTOS

FIELD DIAGRAM



Western Refining SW, Inc. - Gallup Refinery

Project Name	Boring Number	Sample Date	Sample Time	Logged and Sampled By:
WWTP- CARBON CANISTER	WWTP-CC-9	6.14.16	1155	TRACY PAYNE

Total Depth	GPS Coordinates
6"	N35°29.503' W108°25.758'

Current Preciptation	Estimated Wind Speed:	Temperature
None Drizzle Light Moderate Heavy Continuous Intermittent	Slight Moderate Strong Very Strong	74° Clear? / Cloudy?

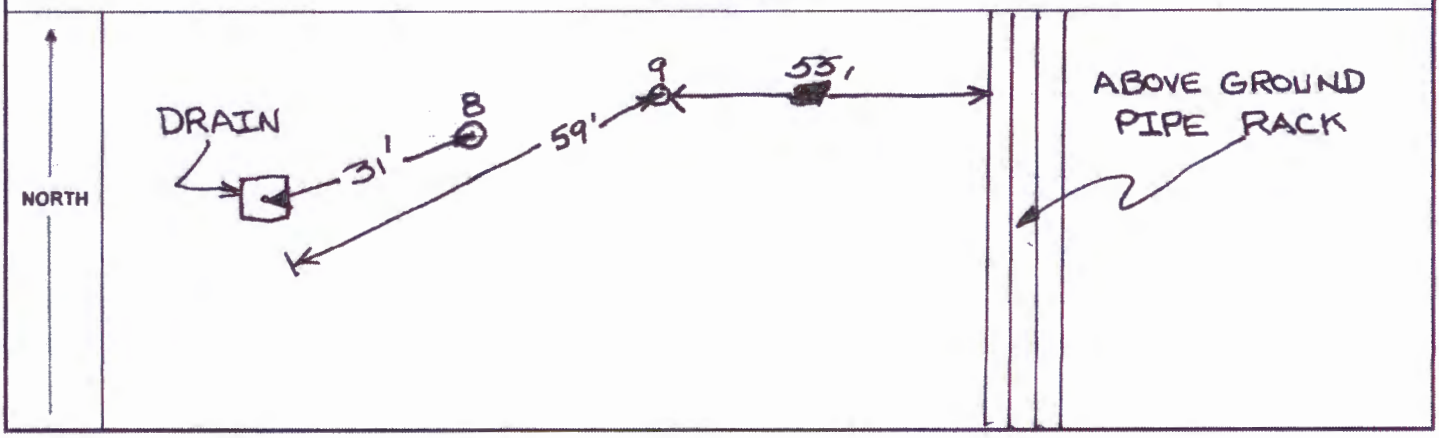
Comments

USED HAND AUGER TO COLLECT SOIL SAMPLE

PID Readings		Sample Disposition						
Interval (feet)	Results (ppm)	Sample Depth (feet bgl)	Sample Type	No. & Container Type	Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology / Sediments
—	—	0-6"	G	3J	0-6"	ML	100	GRAVELLY SILT-FINE GRAIN,
		1155		4V				COMPACT TO LOOSE, DRY,
								BROWN

NO.	PHOTO LOG - DESCRIPTION
	NO PHOTOS

FIELD DIAGRAM



Chain-of-Custody Record

Client: WESTERN REFINING SW, INC. GALLUP REFINERY

Mailing Address: 92 GIANT CROSSING RD GALLUP NM 87301

Phone #: 505-722-0217

email or Fax#: ED.RIEGE@WNR.COM

QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: WWTP CARBON CANISTER CONFIRMATION SAMPLING

Project #:

Project Manager: ED RIEGE

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + 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)	DISSOLVED METALS				Air Bubbles (Y or N)
6/14/16	1030	SOIL	WWTP-CC-5(0-6")	JAR-3	NEAT				✓							✓	✓	✓				
↓	↓	↓	↓	VIAL-2	SOBI											✓						
				VIAL-2	MEOH											✓						
	1045	SOIL	WWTP-CC-6(0-6")	JAR-3	NEAT				✓							✓	✓	✓				
	↓	↓	↓	VIAL-2	SOBI											✓						
				VIAL-2	MEOH											✓						
	1105	SOIL	WWTP-CC-7(0-6")	JAR-3	NEAT				✓							✓	✓	✓				
	↓	↓	↓	VIAL-2	SOBI											✓						
				VIAL-2	MEOH											✓						
	1135	SOIL	WWTP-CC-8(0-6")	JAR-3	NEAT				✓							✓	✓	✓				
	↓	↓	↓	VIAL-2	SOBI											✓						
				VIAL-2	MEOH											✓						

Date:	Time:	Relinquished by:	Received by:	Date	Time
6/15/16	0810	[illegible]	[illegible]	6/15/16	0810
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.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC. GALLUP REFINERY

Mailing Address: 92 GIANT CROSSING RD GALLUP, NM 87301

Phone #: 505-722-0217

email or Fax#: ED.RIEGE@WNR.COM

QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: WWTP CARBON CANISTER CONFIRMATION SAMPLING

Project #:

Project Manager: ED RIEGE

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + 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)	GRAINER LIST METALS				Air Bubbles (Y or N)
6/14/16	1155	SOIL	WWTP-CC-9(0-6')	3 JARS	NEAT				✓						W	✓	✓	✓				
↓	↓	↓	↓	VIAL-2	SOBI											✓						
				VIAL-2	MEOH											✓						
6/14/16	—	MEDIA	MEOH BLANK	VIAL-2	MEOH											✓						

Date	Time	Relinquished by	Received by	Date	Time
6/15/16	0810	[signature]	[signature]	6/15/16	0810
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.

Appendix I

Analytical Data – Confirmation Samples

Appendix I-1

Hall Environmental Analysis Laboratory, Inc.

January 20, 2016

Analytical Report No. 1601570

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

January 20, 2016

Beck Larsen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0258
FAX (505) 722-0210

RE: WWTP Carbon Canister Overflow OrderNo.: 1601570

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/15/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1601570**
Date Reported: **1/20/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Project: WWTP Carbon Canister Overflow
Lab ID: 1601570-001 **Matrix:** SOIL

Client Sample ID: Carbon Canister-Soil Sample #1
Collection Date: 1/13/2016 1:00:00 PM
Received Date: 1/15/2016 4:06:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**KJH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	1/18/2016 2:03:37 PM	23255
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/18/2016 2:03:37 PM	23255
Surr: DNOP	121	70-130		%REC	1	1/18/2016 2:03:37 PM	23255
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	13	4.8		mg/Kg	1	1/19/2016 10:40:44 AM	23266
Surr: BFB	115	66.2-112	S	%REC	1	1/19/2016 10:40:44 AM	23266
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	0.38	0.048		mg/Kg	1	1/19/2016 10:40:44 AM	23266
Toluene	0.59	0.048		mg/Kg	1	1/19/2016 10:40:44 AM	23266
Ethylbenzene	0.10	0.048		mg/Kg	1	1/19/2016 10:40:44 AM	23266
Xylenes, Total	0.46	0.096		mg/Kg	1	1/19/2016 10:40:44 AM	23266
Surr: 4-Bromofluorobenzene	108	80-120		%REC	1	1/19/2016 10:40:44 AM	23266

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Project: WWTP Carbon Canister Overflow
Lab ID: 1601570-002 **Matrix:** SOIL

Client Sample ID: Carbon Canister-Soil Sample #2
Collection Date: 1/13/2016 1:12:00 PM
Received Date: 1/15/2016 4:06:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**KJH**
Diesel Range Organics (DRO)	13	9.5		mg/Kg	1	1/18/2016 2:25:11 PM	23255
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/18/2016 2:25:11 PM	23255
Surr: DNOP	121	70-130		%REC	1	1/18/2016 2:25:11 PM	23255
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	1/19/2016 11:04:27 AM	23266
Surr: BFB	98.7	66.2-112		%REC	1	1/19/2016 11:04:27 AM	23266
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.046		mg/Kg	1	1/19/2016 11:04:27 AM	23266
Toluene	ND	0.046		mg/Kg	1	1/19/2016 11:04:27 AM	23266
Ethylbenzene	ND	0.046		mg/Kg	1	1/19/2016 11:04:27 AM	23266
Xylenes, Total	ND	0.093		mg/Kg	1	1/19/2016 11:04:27 AM	23266
Surr: 4-Bromofluorobenzene	110	80-120		%REC	1	1/19/2016 11:04:27 AM	23266

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Project: WWTP Carbon Canister Overflow
Lab ID: 1601570-003 **Matrix:** SOIL

Client Sample ID: Carbon Canister-Soil Sample #3
Collection Date: 1/13/2016 1:25:00 PM
Received Date: 1/15/2016 4:06:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**KJH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	1/18/2016 2:46:45 PM	23255
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/18/2016 2:46:45 PM	23255
Surr: DNOP	89.7	70-130		%REC	1	1/18/2016 2:46:45 PM	23255
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/19/2016 11:28:10 AM	23266
Surr: BFB	105	66.2-112		%REC	1	1/19/2016 11:28:10 AM	23266
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.048		mg/Kg	1	1/19/2016 11:28:10 AM	23266
Toluene	ND	0.048		mg/Kg	1	1/19/2016 11:28:10 AM	23266
Ethylbenzene	ND	0.048		mg/Kg	1	1/19/2016 11:28:10 AM	23266
Xylenes, Total	ND	0.096		mg/Kg	1	1/19/2016 11:28:10 AM	23266
Surr: 4-Bromofluorobenzene	111	80-120		%REC	1	1/19/2016 11:28:10 AM	23266

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In 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#: **1601570**

all Environmental Analysis Laboratory, Inc.

20-Jan-16

Client: Western Refining Southwest, Gallup
Project: WWTP Carbon Canister Overflow

Sample ID **MB-23255** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **23255** RunNo: **31488**
Prep Date: **1/18/2016** Analysis Date: **1/18/2016** SeqNo: **963650** 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	8.8		10.00		87.8	70	130			

Sample ID **LCS-23255** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **23255** RunNo: **31488**
Prep Date: **1/18/2016** Analysis Date: **1/18/2016** SeqNo: **963694** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	10	50.00	0	79.0	65.8	136			
Surr: DNOP	4.2		5.000		83.1	70	130			

Sample ID **1601570-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Carbon Canister-Soi** Batch ID: **23255** RunNo: **31488**
Prep Date: **1/18/2016** Analysis Date: **1/18/2016** SeqNo: **964164** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	9.1	45.66	5.869	98.1	31.2	162			
Surr: DNOP	4.2		4.566		92.3	70	130			

Sample ID **1601570-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Carbon Canister-Soi** Batch ID: **23255** RunNo: **31488**
Prep Date: **1/18/2016** Analysis Date: **1/18/2016** SeqNo: **964165** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.2	46.00	5.869	85.4	31.2	162	11.5	31.7	
Surr: DNOP	4.1		4.600		89.9	70	130	0	0	

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#: **1601570**

20-Jan-16

Client: Western Refining Southwest, Gallup

Project: WWTP Carbon Canister Overflow

Sample ID **MB-23266** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **23266** RunNo: **31526**

Prep Date: **1/18/2016** Analysis Date: **1/19/2016** SeqNo: **965257** 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	870		1000		87.2	66.2	112			

Sample ID **LCS-23266** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **23266** RunNo: **31526**

Prep Date: **1/18/2016** Analysis Date: **1/19/2016** SeqNo: **965258** 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	79.6	122			
Surr: BFB	960		1000		95.8	66.2	112			

Sample ID **1601570-002AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **Carbon Canister-Soi** Batch ID: **23266** RunNo: **31526**

Prep Date: **1/18/2016** Analysis Date: **1/19/2016** SeqNo: **965259** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.6	23.21	2.096	109	59.3	143			
Surr: BFB	1000		928.5		108	66.2	112			

Sample ID **1601570-002AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **Carbon Canister-Soi** Batch ID: **23266** RunNo: **31526**

Prep Date: **1/18/2016** Analysis Date: **1/19/2016** SeqNo: **965260** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	4.7	23.36	2.096	113	59.3	143	3.89	20	
Surr: BFB	980		934.6		105	66.2	112	0	0	

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1601570**

20-Jan-16

Client: Western Refining Southwest, Gallup
Project: WWTP Carbon Canister Overflow

Sample ID **MB-23266** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **23266** RunNo: **31526**
Prep Date: **1/18/2016** Analysis Date: **1/19/2016** SeqNo: **965266** 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								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.4	80	120			

Sample ID **LCS-23266** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **23266** RunNo: **31526**
Prep Date: **1/18/2016** Analysis Date: **1/19/2016** SeqNo: **965267** 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	80	120			
Toluene	0.96	0.050	1.000	0	95.6	80	120			
Ethylbenzene	0.95	0.050	1.000	0	94.9	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.5	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Sample ID **1601570-001AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Carbon Canister-Soi** Batch ID: **23266** RunNo: **31526**
Prep Date: **1/18/2016** Analysis Date: **1/19/2016** SeqNo: **965268** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.3	0.048	0.9569	0.3813	94.3	71.5	122			
Toluene	1.4	0.048	0.9569	0.5932	86.5	71.2	123			
Ethylbenzene	1.2	0.048	0.9569	0.1038	111	75.2	130			
Xylenes, Total	3.6	0.096	2.871	0.4586	109	72.4	131			
Surr: 4-Bromofluorobenzene	1.1		0.9569		110	80	120			

Sample ID **1601570-001AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Carbon Canister-Soi** Batch ID: **23266** RunNo: **31526**
Prep Date: **1/18/2016** Analysis Date: **1/19/2016** SeqNo: **965269** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.048	0.9560	0.3813	81.5	71.5	122	10.1	20	
Toluene	1.2	0.048	0.9560	0.5932	64.9	71.2	123	15.8	20	S
Ethylbenzene	0.96	0.048	0.9560	0.1038	89.3	75.2	130	19.8	20	
Xylenes, Total	2.9	0.096	2.868	0.4586	86.1	72.4	131	20.4	20	R
Surr: 4-Bromofluorobenzene	1.0		0.9560		108	80	120	0	0	

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: **1601570** RcptNo: **1**

Received by/date: JB 01/15/16

Logged By: **Ashley Gallegos** **1/15/2016 4:06:00 PM** AG

Completed By: **Ashley Gallegos** **1/16/2016 8:41:00 AM** AG

Reviewed By: 01/18/16

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? 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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

ent:	Western - Refining
	Gallup Refinery
illing Address:	92 GIANT CROSSING ROAD
llup NM 87301	
one #:	505 722 3833
ail or Fax#:	505 863 0930
/QC Package:	
Standard	☐ Level 4 (Full Validation)
Other	
EDD (Type)	

Turn Around Time: ☐ Standard ☒ ~~Rush~~

Project Name: WWTP Carbon Canister Overflow

Project #: WWTP Carbon Canister Overflow

Project Manager: Beck Larsen

PO # 20820595

Sampler: CTI/John

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1601570	BTEX	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	RCI	Metals RCRA 8			Air Bubbles (Y or N)
/13/2016	1:00	Soil	Carbon Canister - Soil Sample # 1	9 oz - 1	N/A	-001	X		X													
/13/2016	1:12	Soil	Carbon Canister - Soil Sample # 2	9 oz - 1	N/A	-002	X		X													
/13/2016	1:25	Soil	Carbon Canister - Soil Sample # 3	9 oz - 1	N/A	-003	X		X													

Date	Time	Relinquished by	Received by	Date	Time
-15-16	13:00	A.Dorsey		1-15-16	1300
-15-16	4:06			1-15-16	16:06

Remarks: Samples Containment (1) 4" (2) 4" (3)

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 I-2

Hall Environmental Analysis Laboratory, Inc.

April 25, 2016

Analytical Report No. 1604730

Appendix I-2

Hall Environmental Analysis Laboratory, Inc.

April 25, 2016

Analytical Report No. 1604730

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

April 25, 2016

Beck Larsen
Western Refining Southwest
92 Giant Crossing Road
Gallup, NM 87301
TEL: (505) 722-0258
FAX (505) 722-0210

RE: Carbon Canister Overflow OrderNo.: 1604730

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/15/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1604730**
Date Reported: **4/25/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest
Project: Carbon Canister Overflow
Lab ID: 1604730-001 **Matrix:** SOIL

Client Sample ID: Carbon Canister Overflow
Collection Date: 4/7/2016 11:15:00 AM
Received Date: 4/15/2016 2:05:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	3.4	9.4		mg/Kg	1	4/19/2016 10:59:38 AM	24865
Motor Oil Range Organics (MRO)	ND	47	47		mg/Kg	1	4/19/2016 10:59:38 AM	24865
Surr: DNOP	92.6	0	70-130		%Rec	1	4/19/2016 10:59:38 AM	24865
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.68	3.3		mg/Kg	1	4/19/2016 11:01:12 AM	24853
Surr: BFB	94.3	0	80-120		%Rec	1	4/19/2016 11:01:12 AM	24853
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.0067	0.00056	0.033	J	mg/Kg	1	4/21/2016 3:06:17 PM	24916
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	2.2	1.2	2.5	J	mg/Kg	1	4/20/2016 4:34:47 PM	24881
Arsenic	1.6	0.73	2.5	J	mg/Kg	1	4/20/2016 4:34:47 PM	24881
Barium	360	0.097	0.20		mg/Kg	2	4/20/2016 4:36:32 PM	24881
Beryllium	0.77	0.0046	0.15		mg/Kg	1	4/20/2016 4:34:47 PM	24881
Cadmium	ND	0.063	0.10		mg/Kg	1	4/20/2016 4:34:47 PM	24881
Chromium	6.8	0.12	0.30		mg/Kg	1	4/20/2016 4:34:47 PM	24881
Cobalt	3.7	0.038	0.30		mg/Kg	1	4/20/2016 4:34:47 PM	24881
Lead	4.2	0.17	0.25		mg/Kg	1	4/20/2016 5:56:51 PM	24881
Nickel	6.8	0.11	0.50		mg/Kg	1	4/20/2016 4:34:47 PM	24881
Selenium	ND	1.1	2.5		mg/Kg	1	4/20/2016 4:34:47 PM	24881
Silver	ND	0.032	0.25		mg/Kg	1	4/20/2016 4:34:47 PM	24881
Vanadium	14	0.035	2.5		mg/Kg	1	4/20/2016 4:34:47 PM	24881
Zinc	13	0.57	2.5		mg/Kg	1	4/20/2016 4:34:47 PM	24881
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.013	0.017		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Toluene	ND	0.0020	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Ethylbenzene	ND	0.0027	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Methyl tert-butyl ether (MTBE)	ND	0.010	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,2,4-Trimethylbenzene	ND	0.0024	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,3,5-Trimethylbenzene	ND	0.0024	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,2-Dichloroethane (EDC)	ND	0.0086	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,2-Dibromoethane (EDB)	ND	0.0024	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Naphthalene	ND	0.0052	0.066		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1-Methylnaphthalene	ND	0.0074	0.13		mg/Kg	1	4/18/2016 6:33:18 PM	24836
2-Methylnaphthalene	ND	0.0071	0.13		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Acetone	ND	0.043	0.50		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Bromobenzene	ND	0.0027	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Bromodichloromethane	ND	0.0019	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836

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

Qualifiers:

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

all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest
Project: Carbon Canister Overflow
Lab ID: 1604730-001 **Matrix:** SOIL

Client Sample ID: Carbon Canister Overflow
Collection Date: 4/7/2016 11:15:00 AM
Received Date: 4/15/2016 2:05:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Bromoform	ND	0.0040	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Bromomethane	ND	0.012	0.099		mg/Kg	1	4/18/2016 6:33:18 PM	24836
2-Butanone	ND	0.019	0.33		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Carbon disulfide	ND	0.011	0.33		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Carbon tetrachloride	ND	0.0022	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Chlorobenzene	ND	0.0027	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Chloroethane	ND	0.0066	0.066		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Chloroform	ND	0.0025	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Chloromethane	ND	0.0029	0.099		mg/Kg	1	4/18/2016 6:33:18 PM	24836
2-Chlorotoluene	ND	0.0024	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
4-Chlorotoluene	ND	0.0029	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
cis-1,2-DCE	ND	0.0019	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
cis-1,3-Dichloropropene	ND	0.0031	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,2-Dibromo-3-chloropropane	ND	0.010	0.066		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Dibromochloromethane	ND	0.0030	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Dibromomethane	ND	0.0029	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,2-Dichlorobenzene	ND	0.0029	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
,3-Dichlorobenzene	ND	0.0027	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,4-Dichlorobenzene	ND	0.0041	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Dichlorodifluoromethane	ND	0.010	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,1-Dichloroethane	ND	0.0018	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,1-Dichloroethene	ND	0.011	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,2-Dichloropropane	ND	0.0028	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,3-Dichloropropane	ND	0.0038	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
2,2-Dichloropropane	ND	0.0019	0.066		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,1-Dichloropropene	ND	0.0026	0.066		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Hexachlorobutadiene	ND	0.0041	0.066		mg/Kg	1	4/18/2016 6:33:18 PM	24836
2-Hexanone	ND	0.018	0.33		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Isopropylbenzene	ND	0.0028	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
4-Isopropyltoluene	ND	0.0030	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
4-Methyl-2-pentanone	ND	0.0097	0.33		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Methylene chloride	0.0097	0.0096	0.099	J	mg/Kg	1	4/18/2016 6:33:18 PM	24836
n-Butylbenzene	ND	0.0029	0.099		mg/Kg	1	4/18/2016 6:33:18 PM	24836
n-Propylbenzene	ND	0.0026	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
sec-Butylbenzene	ND	0.0046	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Styrene	ND	0.0030	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
tert-Butylbenzene	ND	0.0027	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,1,1,2-Tetrachloroethane	ND	0.0032	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,1,2,2-Tetrachloroethane	ND	0.0054	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836

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Qualifiers:

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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest
Project: Carbon Canister Overflow
Lab ID: 1604730-001 **Matrix:** SOIL

Client Sample ID: Carbon Canister Overflow
Collection Date: 4/7/2016 11:15:00 AM
Received Date: 4/15/2016 2:05:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Tetrachloroethene (PCE)	ND	0.0027	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
trans-1,2-DCE	ND	0.0093	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
trans-1,3-Dichloropropene	ND	0.0048	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,2,3-Trichlorobenzene	ND	0.0050	0.066		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,2,4-Trichlorobenzene	ND	0.0035	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,1,1-Trichloroethane	ND	0.0020	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,1,2-Trichloroethane	ND	0.0039	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Trichloroethene (TCE)	ND	0.0036	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Trichlorofluoromethane	ND	0.0025	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,2,3-Trichloropropane	ND	0.0057	0.066		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Vinyl chloride	ND	0.0027	0.033		mg/Kg	1	4/18/2016 6:33:18 PM	24836
Xylenes, Total	ND	0.0063	0.066		mg/Kg	1	4/18/2016 6:33:18 PM	24836
1,4-Dioxane	ND	0.16	0.33		mg/Kg	1	4/21/2016 10:37:15 AM	A33684
Surr: Dibromofluoromethane	104		70-130		%Rec	1	4/18/2016 6:33:18 PM	24836
Surr: 1,2-Dichloroethane-d4	105		70-130		%Rec	1	4/18/2016 6:33:18 PM	24836
Surr: Toluene-d8	101		70-130		%Rec	1	4/18/2016 6:33:18 PM	24836
Surr: 4-Bromofluorobenzene	106		70-130		%Rec	1	4/18/2016 6:33:18 PM	24836
SM4500-H+B: PH							Analyst: **JRR**	
pH	8.80	0.100	1.68		pH Units	1	4/19/2016 12:45:00 PM	R33649

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	W	Sample container temperature is out of limit as specified

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160419046
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1604730
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160419046-001	**Sampling Date**	4/7/2016	**Date/Time Received**	4/19/2016	11:20 AM
Client Sample ID	1604730-001C / CARBON CANISTER OVERFLOW			**Extraction Date**	4/21/2016	
Matrix	Soil			**Sampling Time**	11:15 AM	
Comments						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
1,2-Dichlorobenzene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
1,3-Dichlorobenzene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
1,4-Dichlorobenzene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
1-Methylnaphthalene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
2,4-Dimethylphenol	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
2,4-Dinitrophenol	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
2-Methylnaphthalene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
2-Methylphenol	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
3+4-Methylphenol	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
4-Nitrophenol	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Acenaphthene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Anthracene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Benzo[a]anthracene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Benzo[a]pyrene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Benzo[b]fluoranthene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Benzo[k]fluoranthene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Chrysene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Dibenz[a,h]anthracene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Diethylphthalate	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Dimethylphthalate	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Di-n-butylphthalate	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Fluoranthene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Fluorene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Naphthalene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Phenanthrene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	

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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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160419046
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1604730
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160419046-001	**Sampling Date**	4/7/2016	**Date/Time Received**	4/19/2016	11:20 AM
Client Sample ID	1604730-001C / CARBON CANISTER OVERFLOW			**Extraction Date**	4/21/2016	
Matrix	Soil			**Sampling Time**	11:15 AM	
Comments						

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Phenol	0.05	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Pyrene	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Pyridine	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	
Quinoline	ND	mg/kg	0.05	4/21/2016	BMM	EPA 8270D	

Surrogate Data

Sample Number 160419046-001

Surrogate Standard	Method	Percent Recovery	Control Limits
2,4,6-Tribromophenol	EPA 8270D	66.2	58-121
2-Fluorobiphenyl	EPA 8270D	83.6	61-121
2-Fluorophenol	EPA 8270D	84.0	53-114
Nitrobenzene-d5	EPA 8270D	57.2	50-121
Phenol-d5	EPA 8270D	88.6	54-120
Terphenyl-d14	EPA 8270D	80.0	55-121

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160419046
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1604730
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Cyanide	0.514	mg/kg	0.5	102.8	90-110	4/21/2016	4/21/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160419046-001	Cyanide	ND	14.1	mg/kg	14.1	100.0	70-130	4/21/2016	4/21/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide	13.8	mg/kg	14.1	97.9	2.2	0-25	4/21/2016	4/21/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide	ND	mg/Kg	0.5	4/21/2016	4/21/2016

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
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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160419046
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1604730
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	160419046-001	**Sampling Date**	4/7/2016	**Date/Time Received**	4/19/2016 11:20 AM
Client Sample ID	1604730-001C / CARBON CANISTER OVERFLOW			**Sampling Time**	11:15 AM
Matrix	Soil	**Sample Location**			
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/Kg	0.282	4/21/2016	MER	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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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160419046
Project Name: 1604730

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Pyrene	0.73	mg/kg	1	73.0	68-146	4/21/2016	4/21/2016
Phenol	0.85	mg/kg	1	85.0	37-140	4/21/2016	4/21/2016
bis(2-Ethylhexyl)phthalate	0.73	mg/kg	1	73.0	49-172	4/21/2016	4/21/2016
Acenaphthene	0.73	mg/kg	1	73.0	70-119	4/21/2016	4/21/2016
4-Nitrophenol	0.35	mg/kg	1	35.0	10-115	4/21/2016	4/21/2016
1,4-Dichlorobenzene	0.84	mg/kg	1	84.0	44-115	4/21/2016	4/21/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160419046-001	Pyrene	ND	0.80	mg/kg	1	80.0	78-130	4/21/2016	4/21/2016
160419046-001	bis(2-Ethylhexyl)phthalate	ND	0.81	mg/kg	1	81.0	45-139	4/21/2016	4/21/2016
160419046-001	Acenaphthene	ND	0.78	mg/kg	1	78.0	67-120	4/21/2016	4/21/2016
160419046-001	4-Nitrophenol	ND	0.34	mg/kg	1	34.0	10-120	4/21/2016	4/21/2016
160419046-001	1,4-Dichlorobenzene	ND	0.74	mg/kg	1	74.0	47-120	4/21/2016	4/21/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pyrene	0.75	mg/kg	1	75.0	6.5	0-43	4/21/2016	4/21/2016
Phenol	0.87	mg/kg	1	82.0	5.6	0-21	4/21/2016	4/21/2016
bis(2-Ethylhexyl)phthalate	0.77	mg/kg	1	77.0	5.1	0-29	4/21/2016	4/21/2016
Acenaphthene	0.74	mg/kg	1	74.0	5.3	0-20	4/21/2016	4/21/2016
4-Nitrophenol	0.24	mg/kg	1	24.0	34.5	0-51	4/21/2016	4/21/2016
1,4-Dichlorobenzene	0.69	mg/kg	1	69.0	7.0	0-64	4/21/2016	4/21/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
1,2-Dichlorobenzene	ND	mg/kg	0.05	4/21/2016	4/21/2016
1,3-Dichlorobenzene	ND	mg/kg	0.05	4/21/2016	4/21/2016
1,4-Dichlorobenzene	ND	mg/kg	0.05	4/21/2016	4/21/2016
1-Methylnaphthalene	ND	mg/kg	0.05	4/21/2016	4/21/2016
2,4-Dimethylphenol	ND	mg/kg	0.05	4/21/2016	4/21/2016

Comments:

Certifications held by Anatek Labs ID: EPA ID00013, AZ 0701; CO:ID00013, FL(NELAP) E87893, ID:ID00013; MT CERT0026 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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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160419046
Project Name: 1604730

Analytical Results Report
Quality Control Data

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
2,4-Dinitrophenol	ND	mg/kg	0.05	4/21/2016	4/21/2016
2-Methylnaphthalene	ND	mg/kg	0.05	4/21/2016	4/21/2016
2-Methylphenol	ND	mg/kg	0.05	4/21/2016	4/21/2016
3+4-Methylphenol	ND	mg/kg	0.05	4/21/2016	4/21/2016
4-Nitrophenol	ND	mg/kg	0.05	4/21/2016	4/21/2016
Acenaphthene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Anthracene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Benzo[a]anthracene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Benzo[a]pyrene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Benzo[b]fluoranthene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Benzo[k]fluoranthene	ND	mg/kg	0.05	4/21/2016	4/21/2016
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.05	4/21/2016	4/21/2016
Chrysene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Dibenz[a,h]anthracene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Diethylphthalate	ND	mg/kg	0.05	4/21/2016	4/21/2016
Dimethylphthalate	ND	mg/kg	0.05	4/21/2016	4/21/2016
Di-n-butylphthalate	ND	mg/kg	0.05	4/21/2016	4/21/2016
Fluoranthene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Fluorene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Naphthalene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Phenanthrene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Phenol	ND	mg/kg	0.05	4/21/2016	4/21/2016
Pyrene	ND	mg/kg	0.05	4/21/2016	4/21/2016
Pyridine	ND	mg/kg	0.05	4/21/2016	4/21/2016

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

'all Environmental Analysis Laboratory, Inc.

WO#: **1604730**

25-Apr-16

Client: Western Refining Southwest
Project: Carbon Canister Overflow

Sample ID **MB-24865** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **24865** RunNo: **33618**
Prep Date: **4/19/2016** Analysis Date: **4/19/2016** SeqNo: **1034542** 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		94.8	70	130			

Sample ID **LCS-24865** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **24865** RunNo: **33618**
Prep Date: **4/19/2016** Analysis Date: **4/19/2016** SeqNo: **1035160** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.2	65.8	136			
Surr: DNOP	4.7		5.000		93.4	70	130			

Sample ID **MB-24846** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **24846** RunNo: **33618**
Prep Date: **4/18/2016** Analysis Date: **4/19/2016** SeqNo: **1035550** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		92.5	70	130			

Sample ID **LCS-24846** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **24846** RunNo: **33618**
Prep Date: **4/18/2016** Analysis Date: **4/19/2016** SeqNo: **1035611** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		92.5	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1604730**

25-Apr-16

Client: Western Refining Southwest
Project: Carbon Canister Overflow

Sample ID	MB-24836	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range
Client ID:	PBS	Batch ID:	24836	RunNo:	33600
Prep Date:	4/15/2016	Analysis Date:	4/18/2016	SeqNo:	1033974 Units: %Rec

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	930		1000		93.4	80	120			

Sample ID	LCS-24836	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range
Client ID:	LCSS	Batch ID:	24836	RunNo:	33600
Prep Date:	4/15/2016	Analysis Date:	4/18/2016	SeqNo:	1033975 Units: %Rec

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		100	80	120			

Sample ID	MB-24839	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range
Client ID:	PBS	Batch ID:	24839	RunNo:	33600
Prep Date:	4/15/2016	Analysis Date:	4/18/2016	SeqNo:	1033995 Units: %Rec

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	930		1000		93.5	80	120			

Sample ID	LCS-24839	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range
Client ID:	LCSS	Batch ID:	24839	RunNo:	33600
Prep Date:	4/15/2016	Analysis Date:	4/18/2016	SeqNo:	1033996 Units: %Rec

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	80	120			

Sample ID	MB-24840	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range
Client ID:	PBS	Batch ID:	24840	RunNo:	33642
Prep Date:	4/16/2016	Analysis Date:	4/19/2016	SeqNo:	1035835 Units: %Rec

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	930		1000		93.4	80	120			

Sample ID	LCS-24840	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range
Client ID:	LCSS	Batch ID:	24840	RunNo:	33642
Prep Date:	4/16/2016	Analysis Date:	4/19/2016	SeqNo:	1035836 Units: %Rec

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		102	80	120			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1604730**

25-Apr-16

Client: Western Refining Southwest
Project: Carbon Canister Overflow

Sample ID	**MB-24853**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**
Client ID:	**PBS**	Batch ID:	**24853**	RunNo:	**33642**
Prep Date:	**4/18/2016**	Analysis Date:	**4/19/2016**	SeqNo:	**1035851** 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	940		1000		94.3	80	120			

Sample ID	**LCS-24853**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**
Client ID:	**LCSS**	Batch ID:	**24853**	RunNo:	**33642**
Prep Date:	**4/18/2016**	Analysis Date:	**4/19/2016**	SeqNo:	**1035852** 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	96.8	80	120			
Surr: BFB	1000		1000		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
.	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1604730**

25-Apr-16

Client: Western Refining Southwest
Project: Carbon Canister Overflow

Sample ID **mb-24836**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**	
Client ID: **PBS**	Batch ID: **24836**	RunNo: **33608**	
Prep Date: **4/15/2016**	Analysis Date: **4/18/2016**	SeqNo: **1034242**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.10	0.15								J
2-Butanone	0.052	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	0.014	0.15								J
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1604730**

25-Apr-16

Client: Western Refining Southwest
Project: Carbon Canister Overflow

Sample ID **mb-24836** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS** Batch ID: **24836** RunNo: **33608**
Prep Date: **4/15/2016** Analysis Date: **4/18/2016** SeqNo: **1034242** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	0.016	0.15								J
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
:-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	0.52		0.5000		104	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		101	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		105	70	130			

Sample ID **lcs-24836** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **24836** RunNo: **33608**
Prep Date: **4/15/2016** Analysis Date: **4/18/2016** SeqNo: **1034243** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	108	70	130			
Toluene	1.1	0.050	1.000	0	106	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
¬	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	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1604730**

25-Apr-16

Client: Western Refining Southwest
Project: Carbon Canister Overflow

Sample ID **lcs-24836** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **24836** RunNo: **33608**
Prep Date: **4/15/2016** Analysis Date: **4/18/2016** SeqNo: **1034243** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.1	0.050	1.000	0	107	70	130			
Trichloroethene (TCE)	1.0	0.050	1.000	0	104	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.52		0.5000		105	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			

Sample ID **1604730-001ams** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **Carbon Canister Ov** Batch ID: **24836** RunNo: **33608**
Prep Date: Analysis Date: **4/18/2016** SeqNo: **1034246** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.017	0.6627	0	122	49.2	155			
Toluene	0.75	0.033	0.6627	0	114	52	154			
Chlorobenzene	0.74	0.033	0.6627	0	111	53.2	150			
1,1-Dichloroethene	0.82	0.033	0.6627	0	123	34.2	163			
Trichloroethene (TCE)	0.78	0.033	0.6627	0	118	48.2	151			
Surr: Dibromofluoromethane	0.36		0.3314		110	70	130			
Surr: 1,2-Dichloroethane-d4	0.35		0.3314		106	70	130			
Surr: Toluene-d8	0.33		0.3314		99.2	70	130			
Surr: 4-Bromofluorobenzene	0.35		0.3314		106	70	130			

Sample ID **1604730-001amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **Carbon Canister Ov** Batch ID: **24836** RunNo: **33608**
Prep Date: Analysis Date: **4/18/2016** SeqNo: **1034247** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.78	0.017	0.6627	0	118	49.2	155	3.10	20	
Toluene	0.72	0.033	0.6627	0	109	52	154	4.05	20	
Chlorobenzene	0.71	0.033	0.6627	0	107	53.2	150	4.32	20	
1,1-Dichloroethene	0.79	0.033	0.6627	0	119	34.2	163	3.43	20	
Trichloroethene (TCE)	0.76	0.033	0.6627	0	114	48.2	151	3.53	20	
Surr: Dibromofluoromethane	0.36		0.3314		108	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.34		0.3314		104	70	130	0	0	
Surr: Toluene-d8	0.33		0.3314		99.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.35		0.3314		106	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1604730**

all Environmental Analysis Laboratory, Inc.

25-Apr-16

Client: Western Refining Southwest
Project: Carbon Canister Overflow

Sample ID **rb** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS** Batch ID: **A33684** RunNo: **33684**
Prep Date: Analysis Date: **4/21/2016** SeqNo: **1037572** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,4-Dioxane	ND	0.50								
Surr: Dibromofluoromethane	0.50		0.5000		100	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.8	70	130			
Surr: Toluene-d8	0.50		0.5000		100	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **A33684** RunNo: **33684**
Prep Date: Analysis Date: **4/21/2016** SeqNo: **1037573** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.51		0.5000		101	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		98.0	70	130			
Surr: Toluene-d8	0.50		0.5000		99.1	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		105	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	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1604730**

25-Apr-16

Client: Western Refining Southwest

Project: Carbon Canister Overflow

Sample ID **MB-24916**	SampType: **MBLK**	TestCode: **EPA Method 7471: Mercury**								
Client ID: **PBS**	Batch ID: **24916**	RunNo: **33692**								
Prep Date: **4/20/2016**	Analysis Date: **4/21/2016**	SeqNo: **1037908**	Units: **mg/Kg**							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0014	0.033								J

Sample ID **LCS-24916**	SampType: **LCS**	TestCode: **EPA Method 7471: Mercury**								
Client ID: **LCSS**	Batch ID: **24916**	RunNo: **33692**								
Prep Date: **4/20/2016**	Analysis Date: **4/21/2016**	SeqNo: **1037909**	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	101	80	120			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1604730**

'all Environmental Analysis Laboratory, Inc.

25-Apr-16

Client: Western Refining Southwest
Project: Carbon Canister Overflow

Sample ID **MB-24881** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **24881** RunNo: **33671**
Prep Date: **4/19/2016** Analysis Date: **4/20/2016** SeqNo: **1037003** 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	0.052	0.10								J
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Nickel	0.16	0.50								J
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID **LCS-24881** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **24881** RunNo: **33671**
Prep Date: **4/19/2016** Analysis Date: **4/20/2016** SeqNo: **1037004** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	24	2.5	25.00	0	95.0	80	120			
Arsenic	24	2.5	25.00	0	94.6	80	120			
Barium	25	0.10	25.00	0	98.0	80	120			
Beryllium	26	0.15	25.00	0	103	80	120			
Cadmium	24	0.10	25.00	0	95.8	80	120			
Chromium	24	0.30	25.00	0	96.8	80	120			
Cobalt	24	0.30	25.00	0	94.9	80	120			
Nickel	24	0.50	25.00	0	94.8	80	120			
Selenium	22	2.5	25.00	0	89.8	80	120			
Silver	5.0	0.25	5.000	0	99.1	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	23	2.5	25.00	0	92.7	80	120			

Sample ID **MB-24881** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **24881** RunNo: **33671**
Prep Date: **4/19/2016** Analysis Date: **4/20/2016** SeqNo: **1037033** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.25								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	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	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1604730**

25-Apr-16

Client: Western Refining Southwest
Project: Carbon Canister Overflow

Sample ID	**LCS-24881**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**LCSS**	Batch ID:	**24881**	RunNo:	**33671**
Prep Date:	**4/19/2016**	Analysis Date:	**4/20/2016**	SeqNo:	**1037034** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	24	0.25	25.00	0	97.6	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 1604730 Rcpt No: 1

Received by/date: AG 04/15/16

Logged By: Ashley Gallegos 4/15/2016 2:05:00 PM AG

Completed By: Ashley Gallegos 4/18/2016 12:10:57 PM AG

Reviewed By: IO 04/18/16

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? Yes ☑ No ☐ # of preserved bottles checked for pH
(Note discrepancies on chain of custody) (<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:

☐ Standard ☐ Level 4 (Full Validation)

☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☐ Standard ☒ Rush _____

Project Name: Carbon Cannister Overflow

Project #: Confirmation Samples

Project Manager: Beck Larsen

Project #

Sampler: ACT / KS

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. 1604730	RCI	TCLP - Volatiles (8260 B)	TCLP - Semi Volatiles (8270 B)	TCLP - Metals	PAHS		BTEX (8021)B	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	SAME AS HEAL#	~~SOBI/MEOH~~ 1604392					Air Bubbles (Y or N)
4/7/16	11:15	Soil	Carbon Cannister Overflow	KIT	KIT	-001										X	X					
			Confirmation Samples																			

Date	Time	Relinquished by	Received by	Date	Time
4/15/16	12:05 12:00	[signature]	[signature]	04/15/16	1405
Date	Time	Relinquished by	Received by	Date	Time

Remarks: Method 5035 - SOBI/MEOH

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 I-3

Hall Environmental Analysis Laboratory, Inc.

July 26, 2016

Analytical Report No. 1606819

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

July 26, 2016

Ed Riege
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: WWTP Carbon Canister Confirmation Sampling OrderNo.: 1606819

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/15/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-001 **Matrix:** SOIL

Client Sample ID: WWTP-CC-5 (0-6")
Collection Date: 6/14/2016 10:30:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.8	9.5		mg/Kg	1	6/20/2016 12:59:32 PM	25888
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg	1	6/20/2016 12:59:32 PM	25888
Surr: DNOP	92.2	0	70-130		%Rec	1	6/20/2016 12:59:32 PM	25888
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.67	3.3		mg/Kg	1	6/23/2016 5:13:27 PM	R35118
Surr: BFB	101	0	80-120		%Rec	1	6/23/2016 5:13:27 PM	R35118
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.011	0.00056	0.033	J	mg/Kg	1	6/24/2016 12:29:20 PM	26037
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	1.2	2.5		mg/Kg	1	6/27/2016 12:19:44 PM	26038
Arsenic	1.6	0.73	2.5	J	mg/Kg	1	6/27/2016 12:19:44 PM	26038
Barium	540	0.24	0.50		mg/Kg	5	6/27/2016 2:29:47 PM	26038
Beryllium	0.49	0.0046	0.15		mg/Kg	1	6/27/2016 12:19:44 PM	26038
Cadmium	ND	0.063	0.099		mg/Kg	1	6/27/2016 12:19:44 PM	26038
Chromium	4.8	0.12	0.30		mg/Kg	1	6/27/2016 12:19:44 PM	26038
`obalt	2.4	0.038	0.30		mg/Kg	1	6/27/2016 12:19:44 PM	26038
Lead	3.3	0.17	0.25		mg/Kg	1	6/27/2016 12:19:44 PM	26038
Nickel	4.1	0.11	0.50		mg/Kg	1	6/27/2016 12:19:44 PM	26038
Selenium	ND	1.1	2.5		mg/Kg	1	6/27/2016 12:19:44 PM	26038
Silver	ND	0.032	0.25		mg/Kg	1	6/27/2016 12:19:44 PM	26038
Vanadium	13	0.035	2.5		mg/Kg	1	6/27/2016 12:19:44 PM	26038
Zinc	10	0.57	2.5		mg/Kg	1	6/27/2016 12:19:44 PM	26038
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Acenaphthylene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Aniline	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Anthracene	ND	0.13	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Azobenzene	ND	0.24	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Benz(a)anthracene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Benzo(a)pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Benzo(b)fluoranthene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Benzo(g,h,i)perylene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Benzo(k)fluoranthene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Benzoic acid	ND	0.16	0.99	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Benzyl alcohol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Bis(2-chloroethoxy)methane	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Bis(2-chloroethyl)ether	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-001 **Matrix:** SOIL

Client Sample ID: WWTP-CC-5 (0-6")
Collection Date: 6/14/2016 10:30:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Bis(2-ethylhexyl)phthalate	ND	0.16	0.99	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
4-Bromophenyl phenyl ether	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Butyl benzyl phthalate	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Carbazole	ND	0.13	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
4-Chloro-3-methylphenol	ND	0.24	0.99	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
4-Chloroaniline	ND	0.22	0.99	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2-Chloronaphthalene	ND	0.16	0.50	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2-Chlorophenol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
4-Chlorophenyl phenyl ether	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Chrysene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Di-n-butyl phthalate	ND	0.15	0.80	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Di-n-octyl phthalate	ND	0.17	0.80	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Dibenz(a,h)anthracene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Dibenzofuran	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
1,2-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
1,3-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
1,4-Dichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
3,3'-Dichlorobenzidine	ND	0.15	0.50	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Diethyl phthalate	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Dimethyl phthalate	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2,4-Dichlorophenol	ND	0.19	0.80	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2,4-Dimethylphenol	ND	0.22	0.60	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
4,6-Dinitro-2-methylphenol	ND	0.12	0.80	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2,4-Dinitrophenol	ND	0.13	0.99	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2,4-Dinitrotoluene	ND	0.18	0.99	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2,6-Dinitrotoluene	ND	0.21	0.99	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Fluoranthene	ND	0.11	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Fluorene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Hexachlorobenzene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Hexachlorobutadiene	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Hexachlorocyclopentadiene	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Hexachloroethane	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Indeno(1,2,3-cd)pyrene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
1-Methylnaphthalene	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2-Methylnaphthalene	ND	0.24	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2-Methylphenol	ND	0.17	0.80	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
3+4-Methylphenol	ND	0.14	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
N-Nitrosodi-n-propylamine	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938

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

Qualifiers:

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

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-001 **Matrix:** SOIL

Client Sample ID: WWTP-CC-5 (0-6")
Collection Date: 6/14/2016 10:30:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
N-Nitrosodiphenylamine	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Naphthalene	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2-Nitroaniline	ND	0.21	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
3-Nitroaniline	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
4-Nitroaniline	ND	0.14	0.80	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Nitrobenzene	ND	0.21	0.80	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2-Nitrophenol	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
4-Nitrophenol	ND	0.15	0.50	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Pentachlorophenol	ND	0.13	0.80	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Phenanthrene	ND	0.14	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Phenol	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Pyridine	ND	0.16	0.80	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
1,2,4-Trichlorobenzene	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2,4,5-Trichlorophenol	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
2,4,6-Trichlorophenol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 12:00:08 PM	25938
Surr: 2-Fluorophenol	84.7	0	28.3-102	D	%Rec	1	6/22/2016 12:00:08 PM	25938
Surr: Phenol-d5	87.4	0	35.7-103	D	%Rec	1	6/22/2016 12:00:08 PM	25938
Surr: 2,4,6-Tribromophenol	97.2	0	35.2-108	D	%Rec	1	6/22/2016 12:00:08 PM	25938
Surr: Nitrobenzene-d5	94.9		24-118	D	%Rec	1	6/22/2016 12:00:08 PM	25938
Surr: 2-Fluorobiphenyl	104		35.4-111	D	%Rec	1	6/22/2016 12:00:08 PM	25938
Surr: 4-Terphenyl-d14	93.4		15-91.7	SD	%Rec	1	6/22/2016 12:00:08 PM	25938
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Toluene	3.45	0.196	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Ethylbenzene	0.990	0.218	1.62	J	µg/Kg	1	6/24/2016 1:22:00 PM	26053
Methyl tert-butyl ether (MTBE)	ND	0.273	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,2,4-Trimethylbenzene	2.17	0.275	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,3,5-Trimethylbenzene	0.746	0.268	1.62	J	µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,2-Dichloroethane (EDC)	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,2-Dibromoethane (EDB)	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Naphthalene	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1-Methylnaphthalene	ND	0.184	3.25		µg/Kg	1	6/24/2016 1:22:00 PM	26053
2-Methylnaphthalene	ND	0.427	3.25		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Acetone	12.9	0.480	8.11		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Bromobenzene	ND	0.165	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Bromodichloromethane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Bromoform	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Bromomethane	ND	0.292	2.43		µg/Kg	1	6/24/2016 1:22:00 PM	26053

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-001 **Matrix:** SOIL

Client Sample ID: WWTP-CC-5 (0-6")
Collection Date: 6/14/2016 10:30:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
2-Butanone	ND	0.585	8.11		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Carbon disulfide	ND	0.600	8.11		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Carbon tetrachloride	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Chlorobenzene	ND	0.186	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Chloroethane	ND	0.299	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Chloroform	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Chloromethane	ND	0.411	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
2-Chlorotoluene	ND	0.276	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
4-Chlorotoluene	ND	0.270	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
cis-1,2-DCE	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
cis-1,3-Dichloropropene	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,2-Dibromo-3-chloropropane	ND	0.173	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Dibromochloromethane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Dibromomethane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,2-Dichlorobenzene	ND	0.236	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,3-Dichlorobenzene	ND	0.300	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,4-Dichlorobenzene	ND	0.304	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Dichlorodifluoromethane	ND	0.947	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,1-Dichloroethane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,1-Dichloroethene	ND	0.266	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,2-Dichloropropane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,3-Dichloropropane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
2,2-Dichloropropane	ND	0.205	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,1-Dichloropropene	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Hexachlorobutadiene	ND	0.370	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
2-Hexanone	ND	0.404	8.11		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Isopropylbenzene	ND	0.204	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
4-Isopropyltoluene	ND	0.304	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
4-Methyl-2-pentanone	ND	3.25	8.11		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Methylene chloride	ND	1.62	2.43		µg/Kg	1	6/24/2016 1:22:00 PM	26053
n-Butylbenzene	ND	0.395	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
n-Propylbenzene	ND	0.290	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
sec-Butylbenzene	ND	0.288	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Styrene	ND	0.207	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
tert-Butylbenzene	ND	0.237	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,1,1,2-Tetrachloroethane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,1,2,2-Tetrachloroethane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Tetrachloroethene (PCE)	ND	0.213	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
trans-1,2-DCE	ND	0.164	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053

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Qualifiers:

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all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-001 **Matrix:** SOIL

Client Sample ID: WWTP-CC-5 (0-6")
Collection Date: 6/14/2016 10:30:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,3-Dichloropropene	ND	0.196	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,2,3-Trichlorobenzene	ND	0.393	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,2,4-Trichlorobenzene	ND	0.492	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,1,1-Trichloroethane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,1,2-Trichloroethane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Trichloroethene (TCE)	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Trichlorofluoromethane	ND	0.204	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
1,2,3-Trichloropropane	ND	1.62	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Vinyl chloride	ND	0.427	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Xylenes, Total	3.55	0.647	1.62		µg/Kg	1	6/24/2016 1:22:00 PM	26053
Surr: 1,2-Dichloroethane-d4	91.7	0	70-130		%Rec	1	6/24/2016 1:22:00 PM	26053
Surr: 4-Bromofluorobenzene	105	0	70-130		%Rec	1	6/24/2016 1:22:00 PM	26053
Surr: Dibromofluoromethane	78.1	0	70-130		%Rec	1	6/24/2016 1:22:00 PM	26053
Surr: Toluene-d8	106	0	70-130		%Rec	1	6/24/2016 1:22:00 PM	26053

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-002 **Matrix:** SOIL

Client Sample ID: WWTP-CC-6 (0-6")
Collection Date: 6/14/2016 10:45:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	16	1.8	9.7		mg/Kg	1	6/20/2016 2:06:13 PM	25888
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg	1	6/20/2016 2:06:13 PM	25888
Surr: DNOP	90.8	0	70-130		%Rec	1	6/20/2016 2:06:13 PM	25888
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.68	3.3		mg/Kg	1	6/23/2016 5:37:05 PM	R35118
Surr: BFB	97.9	0	80-120		%Rec	1	6/23/2016 5:37:05 PM	R35118
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.031	0.00057	0.033	J	mg/Kg	1	6/24/2016 12:31:07 PM	26037
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	1.2	2.5		mg/Kg	1	6/27/2016 12:23:25 PM	26038
Arsenic	ND	3.6	12		mg/Kg	5	7/18/2016 8:54:48 AM	26038
Barium	460	0.097	0.20		mg/Kg	2	6/27/2016 12:25:24 PM	26038
Beryllium	0.41	0.0046	0.15		mg/Kg	1	6/27/2016 12:23:25 PM	26038
Cadmium	ND	0.063	0.099		mg/Kg	1	6/27/2016 12:23:25 PM	26038
Chromium	3.9	0.12	0.30		mg/Kg	1	6/27/2016 12:23:25 PM	26038
Cobalt	2.3	0.038	0.30		mg/Kg	1	6/27/2016 12:23:25 PM	26038
Lead	0.31	0.17	0.25		mg/Kg	1	6/27/2016 12:23:25 PM	26038
Nickel	4.2	0.11	0.50		mg/Kg	1	6/27/2016 12:23:25 PM	26038
Selenium	ND	2.2	5.0		mg/Kg	2	6/27/2016 12:25:24 PM	26038
Silver	ND	0.032	0.25		mg/Kg	1	6/27/2016 12:23:25 PM	26038
Vanadium	9.7	0.035	2.5		mg/Kg	1	6/27/2016 12:23:25 PM	26038
Zinc	13	0.57	2.5		mg/Kg	1	6/27/2016 12:23:25 PM	26038
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Acenaphthylene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Aniline	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Anthracene	ND	0.13	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Azobenzene	ND	0.24	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Benz(a)anthracene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Benzo(a)pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Benzo(b)fluoranthene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Benzo(g,h,i)perylene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Benzo(k)fluoranthene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Benzoic acid	ND	0.16	0.99	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Benzyl alcohol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Bis(2-chloroethoxy)methane	ND	0.21	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Bis(2-chloroethyl)ether	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938

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all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-002 **Matrix:** SOIL

Client Sample ID: WWTP-CC-6 (0-6")
Collection Date: 6/14/2016 10:45:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Bis(2-ethylhexyl)phthalate	ND	0.16	0.99	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
4-Bromophenyl phenyl ether	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Butyl benzyl phthalate	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Carbazole	ND	0.13	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
4-Chloro-3-methylphenol	ND	0.24	0.99	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
4-Chloroaniline	ND	0.22	0.99	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2-Chloronaphthalene	ND	0.16	0.50	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2-Chlorophenol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
4-Chlorophenyl phenyl ether	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Chrysene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Di-n-butyl phthalate	ND	0.15	0.79	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Di-n-octyl phthalate	ND	0.17	0.79	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Dibenz(a,h)anthracene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Dibenzofuran	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
1,2-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
1,3-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
,4-Dichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
3,3'-Dichlorobenzidine	ND	0.15	0.50	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Diethyl phthalate	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Dimethyl phthalate	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2,4-Dichlorophenol	ND	0.18	0.79	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2,4-Dimethylphenol	ND	0.22	0.59	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
4,6-Dinitro-2-methylphenol	ND	0.12	0.79	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2,4-Dinitrophenol	ND	0.13	0.99	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2,4-Dinitrotoluene	ND	0.18	0.99	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2,6-Dinitrotoluene	ND	0.21	0.99	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Fluoranthene	ND	0.11	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Fluorene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Hexachlorobenzene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Hexachlorobutadiene	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Hexachlorocyclopentadiene	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Hexachloroethane	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Indeno(1,2,3-cd)pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
1-Methylnaphthalene	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2-Methylnaphthalene	ND	0.24	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2-Methylphenol	ND	0.17	0.79	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
3+4-Methylphenol	ND	0.14	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
N-Nitrosodi-n-propylamine	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-002 **Matrix:** SOIL

Client Sample ID: WWTP-CC-6 (0-6")
Collection Date: 6/14/2016 10:45:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
N-Nitrosodiphenylamine	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Naphthalene	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2-Nitroaniline	ND	0.21	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
3-Nitroaniline	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
4-Nitroaniline	ND	0.14	0.79	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Nitrobenzene	ND	0.20	0.79	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2-Nitrophenol	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
4-Nitrophenol	ND	0.15	0.50	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Pentachlorophenol	ND	0.13	0.79	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Phenanthrene	ND	0.13	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Phenol	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Pyridine	ND	0.16	0.79	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
1,2,4-Trichlorobenzene	ND	0.21	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2,4,5-Trichlorophenol	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
2,4,6-Trichlorophenol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:24:16 PM	25938
Surr: 2-Fluorophenol	24.7	0	28.3-102	SD	%Rec	1	6/22/2016 1:24:16 PM	25938
Surr: Phenol-d5	24.2	0	35.7-103	SD	%Rec	1	6/22/2016 1:24:16 PM	25938
Surr: 2,4,6-Tribromophenol	22.9	0	35.2-108	SD	%Rec	1	6/22/2016 1:24:16 PM	25938
Surr: Nitrobenzene-d5	26.9		24-118	D	%Rec	1	6/22/2016 1:24:16 PM	25938
Surr: 2-Fluorobiphenyl	28.3		35.4-111	SD	%Rec	1	6/22/2016 1:24:16 PM	25938
Surr: 4-Terphenyl-d14	24.4		15-91.7	D	%Rec	1	6/22/2016 1:24:16 PM	25938
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Toluene	2.22	0.185	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Ethylbenzene	0.535	0.205	1.53	J	µg/Kg	1	6/24/2016 1:47:00 PM	26053
Methyl tert-butyl ether (MTBE)	ND	0.257	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,2,4-Trimethylbenzene	0.986	0.259	1.53	J	µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,3,5-Trimethylbenzene	0.321	0.252	1.53	J	µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,2-Dichloroethane (EDC)	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,2-Dibromoethane (EDB)	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Naphthalene	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1-Methylnaphthalene	ND	0.174	3.06		µg/Kg	1	6/24/2016 1:47:00 PM	26053
2-Methylnaphthalene	ND	0.402	3.06		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Acetone	8.32	0.452	7.64		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Bromobenzene	ND	0.155	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Bromodichloromethane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Bromoform	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Bromomethane	ND	0.275	2.29		µg/Kg	1	6/24/2016 1:47:00 PM	26053

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

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-002 **Matrix:** SOIL

Client Sample ID: WWTP-CC-6 (0-6")
Collection Date: 6/14/2016 10:45:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
2-Butanone	ND	0.551	7.64		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Carbon disulfide	ND	0.565	7.64		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Carbon tetrachloride	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Chlorobenzene	ND	0.175	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Chloroethane	ND	0.282	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Chloroform	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Chloromethane	ND	0.387	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
2-Chlorotoluene	ND	0.260	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
4-Chlorotoluene	ND	0.254	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
cis-1,2-DCE	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
cis-1,3-Dichloropropene	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,2-Dibromo-3-chloropropane	ND	0.163	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Dibromochloromethane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Dibromomethane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,2-Dichlorobenzene	ND	0.223	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,3-Dichlorobenzene	ND	0.282	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,4-Dichlorobenzene	ND	0.286	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
ichlorodifluoromethane	ND	0.892	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,1-Dichloroethane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,1-Dichloroethene	ND	0.250	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,2-Dichloropropane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,3-Dichloropropane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
2,2-Dichloropropane	ND	0.193	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,1-Dichloropropene	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Hexachlorobutadiene	ND	0.348	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
2-Hexanone	ND	0.381	7.64		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Isopropylbenzene	ND	0.192	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
4-Isopropyltoluene	ND	0.287	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
4-Methyl-2-pentanone	ND	3.06	7.64		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Methylene chloride	ND	1.53	2.29		µg/Kg	1	6/24/2016 1:47:00 PM	26053
n-Butylbenzene	ND	0.372	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
n-Propylbenzene	ND	0.274	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
sec-Butylbenzene	ND	0.271	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Styrene	ND	0.195	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
tert-Butylbenzene	ND	0.223	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,1,1,2-Tetrachloroethane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,1,2,2-Tetrachloroethane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Tetrachloroethene (PCE)	ND	0.201	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
trans-1,2-DCE	ND	0.154	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-002 **Matrix:** SOIL

Client Sample ID: WWTP-CC-6 (0-6")
Collection Date: 6/14/2016 10:45:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,3-Dichloropropene	ND	0.185	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,2,3-Trichlorobenzene	ND	0.370	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,2,4-Trichlorobenzene	ND	0.464	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,1,1-Trichloroethane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,1,2-Trichloroethane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Trichloroethene (TCE)	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Trichlorofluoromethane	ND	0.192	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
1,2,3-Trichloropropane	ND	1.53	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Vinyl chloride	ND	0.402	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Xylenes, Total	1.91	0.609	1.53		µg/Kg	1	6/24/2016 1:47:00 PM	26053
Surr: 1,2-Dichloroethane-d4	97.2	0	70-130		%Rec	1	6/24/2016 1:47:00 PM	26053
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	6/24/2016 1:47:00 PM	26053
Surr: Dibromofluoromethane	81.3	0	70-130		%Rec	1	6/24/2016 1:47:00 PM	26053
Surr: Toluene-d8	105	0	70-130		%Rec	1	6/24/2016 1:47:00 PM	26053

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all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-003 **Matrix:** SOIL

Client Sample ID: WWTP-CC-7 (0-6")
Collection Date: 6/14/2016 11:05:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.8	9.5		mg/Kg	1	6/20/2016 2:34:25 PM	25888
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg	1	6/20/2016 2:34:25 PM	25888
Surr: DNOP	91.7	0	70-130		%Rec	1	6/20/2016 2:34:25 PM	25888
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.77	3.8		mg/Kg	1	6/23/2016 6:00:44 PM	R35118
Surr: BFB	98.6	0	80-120		%Rec	1	6/23/2016 6:00:44 PM	R35118
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.031	0.00057	0.033	J	mg/Kg	1	6/24/2016 12:32:55 PM	26037
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	1.2	2.5		mg/Kg	1	6/27/2016 12:27:20 PM	26038
Arsenic	ND	3.6	12		mg/Kg	5	7/18/2016 8:57:18 AM	26038
Barium	470	0.096	0.20		mg/Kg	2	6/27/2016 12:29:20 PM	26038
Beryllium	0.27	0.0046	0.15		mg/Kg	1	6/27/2016 12:27:20 PM	26038
Cadmium	ND	0.063	0.099		mg/Kg	1	6/27/2016 12:27:20 PM	26038
Chromium	2.7	0.12	0.30		mg/Kg	1	6/27/2016 12:27:20 PM	26038
`obalt	1.6	0.038	0.30		mg/Kg	1	6/27/2016 12:27:20 PM	26038
Lead	ND	0.17	0.25		mg/Kg	1	6/27/2016 12:27:20 PM	26038
Nickel	2.5	0.11	0.50		mg/Kg	1	6/27/2016 12:27:20 PM	26038
Selenium	ND	2.2	5.0		mg/Kg	2	6/27/2016 12:29:20 PM	26038
Silver	ND	0.031	0.25		mg/Kg	1	6/27/2016 12:27:20 PM	26038
Vanadium	9.2	0.035	2.5		mg/Kg	1	6/27/2016 12:27:20 PM	26038
Zinc	5.6	0.57	2.5		mg/Kg	1	6/27/2016 12:27:20 PM	26038
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Acenaphthylene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Aniline	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Anthracene	ND	0.13	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Azobenzene	ND	0.24	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Benz(a)anthracene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Benzo(a)pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Benzo(b)fluoranthene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Benzo(g,h,i)perylene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Benzo(k)fluoranthene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Benzoic acid	ND	0.17	1.0	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Benzyl alcohol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Bis(2-chloroethoxy)methane	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Bis(2-chloroethyl)ether	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-003 **Matrix:** SOIL

Client Sample ID: WWTP-CC-7 (0-6")
Collection Date: 6/14/2016 11:05:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Bis(2-ethylhexyl)phthalate	ND	0.16	1.0	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
4-Bromophenyl phenyl ether	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Butyl benzyl phthalate	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Carbazole	ND	0.13	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
4-Chloro-3-methylphenol	ND	0.24	1.0	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
4-Chloroaniline	ND	0.22	1.0	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2-Chloronaphthalene	ND	0.16	0.50	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2-Chlorophenol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
4-Chlorophenyl phenyl ether	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Chrysene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Di-n-butyl phthalate	ND	0.15	0.80	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Di-n-octyl phthalate	0.17	0.17	0.80	JD	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Dibenz(a,h)anthracene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Dibenzofuran	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
1,2-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
1,3-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
1,4-Dichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
3,3'-Dichlorobenzidine	ND	0.15	0.50	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Diethyl phthalate	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Dimethyl phthalate	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2,4-Dichlorophenol	ND	0.19	0.80	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2,4-Dimethylphenol	ND	0.22	0.60	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
4,6-Dinitro-2-methylphenol	ND	0.12	0.80	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2,4-Dinitrophenol	ND	0.13	1.0	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2,4-Dinitrotoluene	ND	0.18	1.0	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2,6-Dinitrotoluene	ND	0.21	1.0	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Fluoranthene	ND	0.11	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Fluorene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Hexachlorobenzene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Hexachlorobutadiene	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Hexachlorocyclopentadiene	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Hexachloroethane	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Indeno(1,2,3-cd)pyrene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
1-Methylnaphthalene	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2-Methylnaphthalene	ND	0.24	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2-Methylphenol	ND	0.17	0.80	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
3+4-Methylphenol	ND	0.14	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
N-Nitrosodi-n-propylamine	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938

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Qualifiers:

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all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-003 **Matrix:** SOIL

Client Sample ID: WWTP-CC-7 (0-6")
Collection Date: 6/14/2016 11:05:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
N-Nitrosodiphenylamine	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Naphthalene	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2-Nitroaniline	ND	0.21	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
3-Nitroaniline	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
4-Nitroaniline	ND	0.14	0.80	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Nitrobenzene	ND	0.21	0.80	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2-Nitrophenol	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
4-Nitrophenol	ND	0.15	0.50	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Pentachlorophenol	ND	0.13	0.80	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Phenanthrene	ND	0.14	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Phenol	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Pyridine	ND	0.16	0.80	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
1,2,4-Trichlorobenzene	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2,4,5-Trichlorophenol	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
2,4,6-Trichlorophenol	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 1:52:21 PM	25938
Surr: 2-Fluorophenol	79.0	0	28.3-102	D	%Rec	1	6/22/2016 1:52:21 PM	25938
Surr: Phenol-d5	83.4	0	35.7-103	D	%Rec	1	6/22/2016 1:52:21 PM	25938
Surr: 2,4,6-Tribromophenol	76.8	0	35.2-108	D	%Rec	1	6/22/2016 1:52:21 PM	25938
Surr: Nitrobenzene-d5	86.5		24-118	D	%Rec	1	6/22/2016 1:52:21 PM	25938
Surr: 2-Fluorobiphenyl	89.1		35.4-111	D	%Rec	1	6/22/2016 1:52:21 PM	25938
Surr: 4-Terphenyl-d14	66.2		15-91.7	D	%Rec	1	6/22/2016 1:52:21 PM	25938
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Toluene	4.44	0.256	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Ethylbenzene	1.22	0.285	2.12	J	µg/Kg	1	6/24/2016 2:12:00 PM	26053
Methyl tert-butyl ether (MTBE)	ND	0.356	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,2,4-Trimethylbenzene	2.87	0.360	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,3,5-Trimethylbenzene	0.944	0.350	2.12	J	µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,2-Dichloroethane (EDC)	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,2-Dibromoethane (EDB)	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Naphthalene	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1-Methylnaphthalene	ND	0.241	4.24		µg/Kg	1	6/24/2016 2:12:00 PM	26053
2-Methylnaphthalene	ND	0.558	4.24		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Acetone	5.77	0.628	10.6	J	µg/Kg	1	6/24/2016 2:12:00 PM	26053
Bromobenzene	ND	0.216	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Bromodichloromethane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Bromoform	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Bromomethane	ND	0.382	3.18		µg/Kg	1	6/24/2016 2:12:00 PM	26053

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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-003 **Matrix:** SOIL

Client Sample ID: WWTP-CC-7 (0-6")
Collection Date: 6/14/2016 11:05:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
2-Butanone	ND	0.765	10.6		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Carbon disulfide	ND	0.785	10.6		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Carbon tetrachloride	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Chlorobenzene	ND	0.243	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Chloroethane	ND	0.392	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Chloroform	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Chloromethane	ND	0.537	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
2-Chlorotoluene	ND	0.361	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
4-Chlorotoluene	ND	0.353	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
cis-1,2-DCE	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
cis-1,3-Dichloropropene	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,2-Dibromo-3-chloropropane	ND	0.226	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Dibromochloromethane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Dibromomethane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,2-Dichlorobenzene	ND	0.309	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,3-Dichlorobenzene	ND	0.392	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,4-Dichlorobenzene	ND	0.397	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Dichlorodifluoromethane	ND	1.24	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,1-Dichloroethane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,1-Dichloroethene	ND	0.347	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,2-Dichloropropane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,3-Dichloropropane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
2,2-Dichloropropane	ND	0.268	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,1-Dichloropropene	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Hexachlorobutadiene	ND	0.484	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
2-Hexanone	ND	0.528	10.6		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Isopropylbenzene	ND	0.267	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
4-Isopropyltoluene	ND	0.398	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
4-Methyl-2-pentanone	ND	4.24	10.6		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Methylene chloride	ND	2.12	3.18		µg/Kg	1	6/24/2016 2:12:00 PM	26053
n-Butylbenzene	ND	0.517	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
n-Propylbenzene	ND	0.380	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
sec-Butylbenzene	ND	0.377	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Styrene	ND	0.271	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
tert-Butylbenzene	ND	0.310	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,1,1,2-Tetrachloroethane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,1,2,2-Tetrachloroethane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Tetrachloroethene (PCE)	ND	0.279	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
trans-1,2-DCE	ND	0.214	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053

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Qualifiers:

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

all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-003 **Matrix:** SOIL

Client Sample ID: WWTP-CC-7 (0-6")
Collection Date: 6/14/2016 11:05:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,3-Dichloropropene	ND	0.257	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,2,3-Trichlorobenzene	ND	0.513	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,2,4-Trichlorobenzene	ND	0.643	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,1,1-Trichloroethane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,1,2-Trichloroethane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Trichloroethene (TCE)	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Trichlorofluoromethane	ND	0.267	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
1,2,3-Trichloropropane	ND	2.12	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Vinyl chloride	ND	0.558	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Xylenes, Total	4.65	0.846	2.12		µg/Kg	1	6/24/2016 2:12:00 PM	26053
Surr: 1,2-Dichloroethane-d4	92.6	0	70-130		%Rec	1	6/24/2016 2:12:00 PM	26053
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	6/24/2016 2:12:00 PM	26053
Surr: Dibromofluoromethane	80.4	0	70-130		%Rec	1	6/24/2016 2:12:00 PM	26053
Surr: Toluene-d8	111	0	70-130		%Rec	1	6/24/2016 2:12:00 PM	26053

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-004 **Matrix:** SOIL

Client Sample ID: WWTP-CC-8 (0-6")
Collection Date: 6/14/2016 11:35:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	12	1.9	10		mg/Kg	1	6/20/2016 4:27:34 PM	25888
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	6/20/2016 4:27:34 PM	25888
Surr: DNOP	93.5	0	70-130		%Rec	1	6/20/2016 4:27:34 PM	25888
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	2.8	0.88	4.3	J	mg/Kg	1	6/23/2016 6:24:20 PM	R35118
Surr: BFB	99.5	0	80-120		%Rec	1	6/23/2016 6:24:20 PM	R35118
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.065	0.00057	0.033		mg/Kg	1	6/24/2016 12:38:25 PM	26037
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	1.2	2.5		mg/Kg	1	6/27/2016 12:31:16 PM	26038
Arsenic	ND	7.2	25		mg/Kg	10	6/27/2016 2:31:35 PM	26038
Barium	1400	0.48	0.99		mg/Kg	10	6/27/2016 2:31:35 PM	26038
Beryllium	0.37	0.0046	0.15		mg/Kg	1	6/27/2016 12:31:16 PM	26038
Cadmium	ND	0.063	0.099		mg/Kg	1	6/27/2016 12:31:16 PM	26038
Chromium	4.8	0.12	0.30		mg/Kg	1	6/27/2016 12:31:16 PM	26038
Cobalt	2.2	0.038	0.30		mg/Kg	1	6/27/2016 12:31:16 PM	26038
Lead	0.82	0.17	0.25		mg/Kg	1	6/27/2016 12:31:16 PM	26038
Nickel	3.7	0.11	0.50		mg/Kg	1	6/27/2016 12:31:16 PM	26038
Selenium	ND	2.2	5.0		mg/Kg	2	6/27/2016 12:33:17 PM	26038
Silver	ND	0.031	0.25		mg/Kg	1	6/27/2016 12:31:16 PM	26038
Vanadium	11	0.035	2.5		mg/Kg	1	6/27/2016 12:31:16 PM	26038
Zinc	9.4	0.57	2.5		mg/Kg	1	6/27/2016 12:31:16 PM	26038
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Acenaphthylene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Aniline	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Anthracene	ND	0.13	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Azobenzene	ND	0.24	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Benz(a)anthracene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Benzo(a)pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Benzo(b)fluoranthene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Benzo(g,h,i)perylene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Benzo(k)fluoranthene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Benzoic acid	ND	0.17	1.0	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Benzyl alcohol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Bis(2-chloroethoxy)methane	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Bis(2-chloroethyl)ether	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938

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Qualifiers:

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all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-004 **Matrix:** SOIL

Client Sample ID: WWTP-CC-8 (0-6")
Collection Date: 6/14/2016 11:35:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Bis(2-ethylhexyl)phthalate	ND	0.16	1.0	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
4-Bromophenyl phenyl ether	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Butyl benzyl phthalate	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Carbazole	ND	0.14	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
4-Chloro-3-methylphenol	ND	0.24	1.0	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
4-Chloroaniline	ND	0.22	1.0	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2-Chloronaphthalene	ND	0.16	0.50	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2-Chlorophenol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
4-Chlorophenyl phenyl ether	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Chrysene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Di-n-butyl phthalate	ND	0.15	0.80	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Di-n-octyl phthalate	ND	0.17	0.80	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Dibenz(a,h)anthracene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Dibenzofuran	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
1,2-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
1,3-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
,4-Dichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
3,3'-Dichlorobenzidine	ND	0.15	0.50	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Diethyl phthalate	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Dimethyl phthalate	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2,4-Dichlorophenol	ND	0.19	0.80	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2,4-Dimethylphenol	ND	0.22	0.60	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
4,6-Dinitro-2-methylphenol	ND	0.12	0.80	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2,4-Dinitrophenol	ND	0.13	1.0	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2,4-Dinitrotoluene	ND	0.18	1.0	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2,6-Dinitrotoluene	ND	0.21	1.0	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Fluoranthene	ND	0.12	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Fluorene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Hexachlorobenzene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Hexachlorobutadiene	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Hexachlorocyclopentadiene	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Hexachloroethane	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Indeno(1,2,3-cd)pyrene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
1-Methylnaphthalene	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2-Methylnaphthalene	ND	0.24	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2-Methylphenol	ND	0.17	0.80	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
3+4-Methylphenol	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
N-Nitrosodi-n-propylamine	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-004 **Matrix:** SOIL

Client Sample ID: WWTP-CC-8 (0-6")
Collection Date: 6/14/2016 11:35:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
N-Nitrosodiphenylamine	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Naphthalene	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2-Nitroaniline	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
3-Nitroaniline	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
4-Nitroaniline	ND	0.14	0.80	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Nitrobenzene	ND	0.21	0.80	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2-Nitrophenol	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
4-Nitrophenol	ND	0.15	0.50	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Pentachlorophenol	ND	0.13	0.80	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Phenanthrene	ND	0.14	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Phenol	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Pyridine	ND	0.16	0.80	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
1,2,4-Trichlorobenzene	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2,4,5-Trichlorophenol	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
2,4,6-Trichlorophenol	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:20:50 PM	25938
Surr: 2-Fluorophenol	65.8	0	28.3-102	D	%Rec	1	6/22/2016 2:20:50 PM	25938
Surr: Phenol-d5	64.8	0	35.7-103	D	%Rec	1	6/22/2016 2:20:50 PM	25938
Surr: 2,4,6-Tribromophenol	65.9	0	35.2-108	D	%Rec	1	6/22/2016 2:20:50 PM	25938
Surr: Nitrobenzene-d5	71.3		24-118	D	%Rec	1	6/22/2016 2:20:50 PM	25938
Surr: 2-Fluorobiphenyl	71.6		35.4-111	D	%Rec	1	6/22/2016 2:20:50 PM	25938
Surr: 4-Terphenyl-d14	59.2		15-91.7	D	%Rec	1	6/22/2016 2:20:50 PM	25938
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Toluene	4.11	0.207	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Ethylbenzene	1.25	0.230	1.71	J	µg/Kg	1	6/24/2016 2:37:00 PM	26053
Methyl tert-butyl ether (MTBE)	ND	0.287	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,2,4-Trimethylbenzene	2.75	0.290	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,3,5-Trimethylbenzene	0.967	0.282	1.71	J	µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,2-Dichloroethane (EDC)	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,2-Dibromoethane (EDB)	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Naphthalene	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1-Methylnaphthalene	ND	0.195	3.42		µg/Kg	1	6/24/2016 2:37:00 PM	26053
2-Methylnaphthalene	ND	0.450	3.42		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Acetone	9.91	0.506	8.56		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Bromobenzene	ND	0.174	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Bromodichloromethane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Bromoform	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Bromomethane	ND	0.308	2.57		µg/Kg	1	6/24/2016 2:37:00 PM	26053

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Qualifiers:

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all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-004 **Matrix:** SOIL

Client Sample ID: WWTP-CC-8 (0-6")
Collection Date: 6/14/2016 11:35:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
2-Butanone	ND	0.617	8.56		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Carbon disulfide	ND	0.633	8.56		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Carbon tetrachloride	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Chlorobenzene	ND	0.196	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Chloroethane	ND	0.316	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Chloroform	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Chloromethane	ND	0.434	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
2-Chlorotoluene	ND	0.291	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
4-Chlorotoluene	ND	0.284	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
cis-1,2-DCE	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
cis-1,3-Dichloropropene	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,2-Dibromo-3-chloropropane	ND	0.182	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Dibromochloromethane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Dibromomethane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,2-Dichlorobenzene	ND	0.249	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,3-Dichlorobenzene	ND	0.316	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,4-Dichlorobenzene	ND	0.320	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
ichlorodifluoromethane	ND	0.999	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,1-Dichloroethane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,1-Dichloroethene	ND	0.280	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,2-Dichloropropane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,3-Dichloropropane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
2,2-Dichloropropane	ND	0.216	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,1-Dichloropropene	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Hexachlorobutadiene	ND	0.390	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
2-Hexanone	ND	0.426	8.56		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Isopropylbenzene	ND	0.215	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
4-Isopropyltoluene	ND	0.321	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
4-Methyl-2-pentanone	ND	3.42	8.56		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Methylene chloride	ND	1.71	2.57		µg/Kg	1	6/24/2016 2:37:00 PM	26053
n-Butylbenzene	ND	0.417	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
n-Propylbenzene	ND	0.306	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
sec-Butylbenzene	ND	0.304	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Styrene	ND	0.219	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
tert-Butylbenzene	ND	0.250	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,1,1,2-Tetrachloroethane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,1,2,2-Tetrachloroethane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Tetrachloroethene (PCE)	ND	0.225	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
trans-1,2-DCE	ND	0.173	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-004 **Matrix:** SOIL

Client Sample ID: WWTP-CC-8 (0-6")
Collection Date: 6/14/2016 11:35:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,3-Dichloropropene	ND	0.207	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,2,3-Trichlorobenzene	ND	0.414	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,2,4-Trichlorobenzene	ND	0.519	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,1,1-Trichloroethane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,1,2-Trichloroethane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Trichloroethene (TCE)	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Trichlorofluoromethane	ND	0.215	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
1,2,3-Trichloropropane	ND	1.71	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Vinyl chloride	ND	0.450	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Xylenes, Total	4.53	0.682	1.71		µg/Kg	1	6/24/2016 2:37:00 PM	26053
Surr: 1,2-Dichloroethane-d4	94.8	0	70-130		%Rec	1	6/24/2016 2:37:00 PM	26053
Surr: 4-Bromofluorobenzene	109	0	70-130		%Rec	1	6/24/2016 2:37:00 PM	26053
Surr: Dibromofluoromethane	78.6	0	70-130		%Rec	1	6/24/2016 2:37:00 PM	26053
Surr: Toluene-d8	107	0	70-130		%Rec	1	6/24/2016 2:37:00 PM	26053

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all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-005 **Matrix:** SOIL

Client Sample ID: WWTP-CC-9 (0-6")
Collection Date: 6/14/2016 11:55:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **JME**	
Diesel Range Organics (DRO)	6.9	1.7	9.3	J	mg/Kg	1	6/20/2016 3:02:37 PM	25888
Motor Oil Range Organics (MRO)	ND	47	47		mg/Kg	1	6/20/2016 3:02:37 PM	25888
Surr: DNOP	93.2	0	70-130		%Rec	1	6/20/2016 3:02:37 PM	25888
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	0.81	3.9		mg/Kg	1	6/23/2016 6:47:50 PM	R35118
Surr: BFB	97.2	0	80-120		%Rec	1	6/23/2016 6:47:50 PM	R35118
EPA METHOD 7471: MERCURY							Analyst: **pmf**	
Mercury	0.028	0.00056	0.032	J	mg/Kg	1	6/24/2016 12:40:14 PM	26037
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Antimony	ND	1.2	2.5		mg/Kg	1	6/27/2016 12:35:07 PM	26038
Arsenic	ND	3.7	13		mg/Kg	5	6/27/2016 2:33:27 PM	26038
Barium	760	0.24	0.50		mg/Kg	5	6/27/2016 2:33:27 PM	26038
Beryllium	0.36	0.0046	0.15		mg/Kg	1	6/27/2016 12:35:07 PM	26038
Cadmium	ND	0.064	0.10		mg/Kg	1	6/27/2016 12:35:07 PM	26038
Chromium	3.6	0.13	0.30		mg/Kg	1	6/27/2016 12:35:07 PM	26038
Cobalt	2.0	0.038	0.30		mg/Kg	1	6/27/2016 12:35:07 PM	26038
Lead	0.24	0.18	0.25	J	mg/Kg	1	6/27/2016 12:35:07 PM	26038
Nickel	3.4	0.11	0.50		mg/Kg	1	6/27/2016 12:35:07 PM	26038
Selenium	ND	2.2	5.0		mg/Kg	2	6/27/2016 12:37:06 PM	26038
Silver	ND	0.032	0.25		mg/Kg	1	6/27/2016 12:35:07 PM	26038
Vanadium	12	0.035	2.5		mg/Kg	1	6/27/2016 12:35:07 PM	26038
Zinc	9.2	0.57	2.5		mg/Kg	1	6/27/2016 12:35:07 PM	26038
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Acenaphthene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Acenaphthylene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Aniline	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Anthracene	ND	0.13	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Azobenzene	ND	0.24	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Benz(a)anthracene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Benzo(a)pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Benzo(b)fluoranthene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Benzo(g,h,i)perylene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Benzo(k)fluoranthene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Benzoic acid	ND	0.17	1.0	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Benzyl alcohol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Bis(2-chloroethoxy)methane	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Bis(2-chloroethyl)ether	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-005 **Matrix:** SOIL

Client Sample ID: WWTP-CC-9 (0-6")
Collection Date: 6/14/2016 11:55:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
Bis(2-chloroisopropyl)ether	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Bis(2-ethylhexyl)phthalate	ND	0.16	1.0	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
4-Bromophenyl phenyl ether	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Butyl benzyl phthalate	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Carbazole	ND	0.13	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
4-Chloro-3-methylphenol	ND	0.24	1.0	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
4-Chloroaniline	ND	0.22	1.0	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2-Chloronaphthalene	ND	0.16	0.50	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2-Chlorophenol	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
4-Chlorophenyl phenyl ether	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Chrysene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Di-n-butyl phthalate	ND	0.15	0.80	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Di-n-octyl phthalate	ND	0.17	0.80	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Dibenz(a,h)anthracene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Dibenzofuran	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
1,2-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
1,3-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
1,4-Dichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
3,3´-Dichlorobenzidine	ND	0.15	0.50	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Diethyl phthalate	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Dimethyl phthalate	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2,4-Dichlorophenol	ND	0.19	0.80	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2,4-Dimethylphenol	ND	0.22	0.60	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
4,6-Dinitro-2-methylphenol	ND	0.12	0.80	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2,4-Dinitrophenol	ND	0.13	1.0	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2,4-Dinitrotoluene	ND	0.18	1.0	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2,6-Dinitrotoluene	ND	0.21	1.0	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Fluoranthene	ND	0.11	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Fluorene	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Hexachlorobenzene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Hexachlorobutadiene	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Hexachlorocyclopentadiene	ND	0.23	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Hexachloroethane	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Indeno(1,2,3-cd)pyrene	ND	0.16	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
1-Methylnaphthalene	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2-Methylnaphthalene	ND	0.24	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2-Methylphenol	ND	0.17	0.80	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
3+4-Methylphenol	ND	0.14	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
N-Nitrosodi-n-propylamine	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938

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

Qualifiers:

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

all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-005 **Matrix:** SOIL

Client Sample ID: WWTP-CC-9 (0-6")
Collection Date: 6/14/2016 11:55:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: **JDC**	
N-Nitrosodiphenylamine	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Naphthalene	ND	0.19	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2-Nitroaniline	ND	0.21	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
3-Nitroaniline	ND	0.18	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
4-Nitroaniline	ND	0.14	0.80	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Nitrobenzene	ND	0.21	0.80	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2-Nitrophenol	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
4-Nitrophenol	ND	0.15	0.50	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Pentachlorophenol	ND	0.13	0.80	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Phenanthrene	ND	0.14	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Phenol	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Pyrene	ND	0.15	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Pyridine	ND	0.16	0.80	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
1,2,4-Trichlorobenzene	ND	0.22	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2,4,5-Trichlorophenol	ND	0.20	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
2,4,6-Trichlorophenol	ND	0.17	0.40	D	mg/Kg	1	6/22/2016 2:49:03 PM	25938
Surr: 2-Fluorophenol	72.9	0	28.3-102	D	%Rec	1	6/22/2016 2:49:03 PM	25938
Surr: Phenol-d5	82.0	0	35.7-103	D	%Rec	1	6/22/2016 2:49:03 PM	25938
Surr: 2,4,6-Tribromophenol	92.9	0	35.2-108	D	%Rec	1	6/22/2016 2:49:03 PM	25938
Surr: Nitrobenzene-d5	84.4		24-118	D	%Rec	1	6/22/2016 2:49:03 PM	25938
Surr: 2-Fluorobiphenyl	92.2		35.4-111	D	%Rec	1	6/22/2016 2:49:03 PM	25938
Surr: 4-Terphenyl-d14	75.8		15-91.7	D	%Rec	1	6/22/2016 2:49:03 PM	25938
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
Benzene	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Toluene	3.33	0.200	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Ethylbenzene	0.952	0.222	1.66	J	µg/Kg	1	6/24/2016 3:02:00 PM	26053
Methyl tert-butyl ether (MTBE)	ND	0.278	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,2,4-Trimethylbenzene	2.08	0.281	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,3,5-Trimethylbenzene	0.654	0.273	1.66	J	µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,2-Dichloroethane (EDC)	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,2-Dibromoethane (EDB)	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Naphthalene	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1-Methylnaphthalene	ND	0.188	3.31		µg/Kg	1	6/24/2016 3:02:00 PM	26053
2-Methylnaphthalene	ND	0.436	3.31		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Acetone	5.31	0.490	8.28	J	µg/Kg	1	6/24/2016 3:02:00 PM	26053
Bromobenzene	ND	0.168	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Bromodichloromethane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Bromoform	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Bromomethane	ND	0.298	2.48		µg/Kg	1	6/24/2016 3:02:00 PM	26053

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-005 **Matrix:** SOIL

Client Sample ID: WWTP-CC-9 (0-6")
Collection Date: 6/14/2016 11:55:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
2-Butanone	ND	0.597	8.28		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Carbon disulfide	ND	0.612	8.28		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Carbon tetrachloride	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Chlorobenzene	ND	0.190	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Chloroethane	ND	0.306	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Chloroform	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Chloromethane	ND	0.419	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
2-Chlorotoluene	ND	0.282	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
4-Chlorotoluene	ND	0.275	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
cis-1,2-DCE	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
cis-1,3-Dichloropropene	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,2-Dibromo-3-chloropropane	ND	0.176	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Dibromochloromethane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Dibromomethane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,2-Dichlorobenzene	ND	0.241	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,3-Dichlorobenzene	ND	0.306	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,4-Dichlorobenzene	ND	0.310	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Dichlorodifluoromethane	ND	0.967	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,1-Dichloroethane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,1-Dichloroethene	ND	0.271	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,2-Dichloropropane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,3-Dichloropropane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
2,2-Dichloropropane	ND	0.209	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,1-Dichloropropene	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Hexachlorobutadiene	ND	0.377	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
2-Hexanone	ND	0.412	8.28		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Isopropylbenzene	ND	0.208	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
4-Isopropyltoluene	ND	0.311	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
4-Methyl-2-pentanone	ND	3.31	8.28		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Methylene chloride	ND	1.66	2.48		µg/Kg	1	6/24/2016 3:02:00 PM	26053
n-Butylbenzene	ND	0.403	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
n-Propylbenzene	ND	0.296	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
sec-Butylbenzene	ND	0.294	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Styrene	ND	0.212	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
tert-Butylbenzene	ND	0.242	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,1,1,2-Tetrachloroethane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,1,2,2-Tetrachloroethane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Tetrachloroethene (PCE)	ND	0.218	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
trans-1,2-DCE	ND	0.167	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053

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Qualifiers:

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

all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sa
Lab ID: 1606819-005 **Matrix:** SOIL

Client Sample ID: WWTP-CC-9 (0-6")
Collection Date: 6/14/2016 11:55:00 AM
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: **BCN**	
trans-1,3-Dichloropropene	ND	0.200	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,2,3-Trichlorobenzene	ND	0.401	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,2,4-Trichlorobenzene	ND	0.502	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,1,1-Trichloroethane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,1,2-Trichloroethane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Trichloroethene (TCE)	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Trichlorofluoromethane	ND	0.208	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
1,2,3-Trichloropropane	ND	1.66	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Vinyl chloride	ND	0.436	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Xylenes, Total	3.39	0.660	1.66		µg/Kg	1	6/24/2016 3:02:00 PM	26053
Surr: 1,2-Dichloroethane-d4	95.7	0	70-130		%Rec	1	6/24/2016 3:02:00 PM	26053
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	6/24/2016 3:02:00 PM	26053
Surr: Dibromofluoromethane	78.5	0	70-130		%Rec	1	6/24/2016 3:02:00 PM	26053
Surr: Toluene-d8	106	0	70-130		%Rec	1	6/24/2016 3:02:00 PM	26053

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company
Client Sample ID: MEOH BLANK
Project: WWTP Carbon Canister Confirmation Sa
Collection Date:
Lab ID: 1606819-006
Matrix: MEOH BLAN
Received Date: 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
Benzene	ND	0.020	0.025		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Toluene	ND	0.0030	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Ethylbenzene	ND	0.0041	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Methyl tert-butyl ether (MTBE)	ND	0.016	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,2,4-Trimethylbenzene	ND	0.0037	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,3,5-Trimethylbenzene	ND	0.0036	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,2-Dichloroethane (EDC)	ND	0.013	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,2-Dibromoethane (EDB)	ND	0.0036	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Naphthalene	ND	0.0078	0.10		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1-Methylnaphthalene	ND	0.011	0.20		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
2-Methylnaphthalene	ND	0.011	0.20		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Acetone	ND	0.065	0.75		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Bromobenzene	ND	0.0040	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Bromodichloromethane	ND	0.0029	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Bromoform	ND	0.0061	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Bromomethane	0.027	0.018	0.15	J	mg/Kg	1	6/29/2016 4:20:47 PM	D35309
2-Butanone	0.052	0.029	0.50	J	mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Carbon disulfide	ND	0.017	0.50		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Carbon tetrachloride	ND	0.0033	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Chlorobenzene	ND	0.0041	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Chloroethane	ND	0.010	0.10		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Chloroform	ND	0.0038	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Chloromethane	0.063	0.0044	0.15	J	mg/Kg	1	6/29/2016 4:20:47 PM	D35309
2-Chlorotoluene	ND	0.0037	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
4-Chlorotoluene	ND	0.0044	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
cis-1,2-DCE	ND	0.0029	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
cis-1,3-Dichloropropene	ND	0.0046	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,2-Dibromo-3-chloropropane	ND	0.015	0.10		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Dibromochloromethane	ND	0.0045	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Dibromomethane	ND	0.0043	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,2-Dichlorobenzene	ND	0.0044	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,3-Dichlorobenzene	ND	0.0041	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,4-Dichlorobenzene	ND	0.0062	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Dichlorodifluoromethane	ND	0.015	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,1-Dichloroethane	ND	0.0027	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,1-Dichloroethene	ND	0.016	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,2-Dichloropropane	ND	0.0042	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,3-Dichloropropane	ND	0.0057	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
2,2-Dichloropropane	ND	0.0029	0.10		mg/Kg	1	6/29/2016 4:20:47 PM	D35309

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

Qualifiers:

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

all Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company **Client Sample ID:** MEOH BLANK
Project: WWTP Carbon Canister Confirmation Sa **Collection Date:**
Lab ID: 1606819-006 **Matrix:** MEOH BLAN **Received Date:** 6/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: **DJF**	
1,1-Dichloropropene	ND	0.0040	0.10		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Hexachlorobutadiene	ND	0.0061	0.10		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
2-Hexanone	ND	0.027	0.50		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Isopropylbenzene	ND	0.0043	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
4-Isopropyltoluene	ND	0.0045	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
4-Methyl-2-pentanone	ND	0.015	0.50		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Methylene chloride	ND	0.014	0.15		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
n-Butylbenzene	ND	0.0044	0.15		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
n-Propylbenzene	ND	0.0038	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
sec-Butylbenzene	ND	0.0069	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Styrene	ND	0.0045	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
tert-Butylbenzene	ND	0.0041	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,1,1,2-Tetrachloroethane	ND	0.0048	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,1,2,2-Tetrachloroethane	ND	0.0081	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Tetrachloroethene (PCE)	ND	0.0041	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
trans-1,2-DCE	ND	0.014	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
trans-1,3-Dichloropropene	ND	0.0073	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
,2,3-Trichlorobenzene	ND	0.0075	0.10		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,2,4-Trichlorobenzene	ND	0.0053	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,1,1-Trichloroethane	ND	0.0031	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,1,2-Trichloroethane	ND	0.0059	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Trichloroethene (TCE)	ND	0.0054	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Trichlorofluoromethane	ND	0.0037	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
1,2,3-Trichloropropane	ND	0.0086	0.10		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Vinyl chloride	ND	0.0041	0.050		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Xylenes, Total	ND	0.0095	0.10		mg/Kg	1	6/29/2016 4:20:47 PM	D35309
Surr: Dibromofluoromethane	104		70-130		%Rec	1	6/29/2016 4:20:47 PM	D35309
Surr: 1,2-Dichloroethane-d4	109		70-130		%Rec	1	6/29/2016 4:20:47 PM	D35309
Surr: Toluene-d8	93.8		70-130		%Rec	1	6/29/2016 4:20:47 PM	D35309
Surr: 4-Bromofluorobenzene	96.5		70-130		%Rec	1	6/29/2016 4:20:47 PM	D35309

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

Qualifiers:

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

Anatek Labs, Inc.

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160617018
Project Name: 1606819

Analytical Results Report

Sample Number 160617018-001 **Sampling Date** 6/14/2016 **Date/Time Received** 6/17/2016 12:00 PM
Client Sample ID 1606819-001C / WWTP-CC-5 (0-6) **Sampling Time** 10:30 AM
Matrix Soil **Sample Location**
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/Kg	0.256	6/23/2016	MER	EPA 335.4	
%moisture	4.6	Percent		6/22/2016	MER	%moisture	

Sample Number 160617018-002 **Sampling Date** 6/14/2016 **Date/Time Received** 6/17/2016 12:00 PM
Client Sample ID 1606819-002C / WWTP-CC-6 (0-6) **Sampling Time** 10:45 AM
Matrix Soil **Sample Location**
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/Kg	0.259	6/23/2016	MER	EPA 335.4	
%moisture	3.7	Percent		6/22/2016	MER	%moisture	

Sample Number 160617018-003 **Sampling Date** 6/14/2016 **Date/Time Received** 6/17/2016 12:00 PM
Client Sample ID 1606819-003C / WWTP-CC-7 (0-6) **Sampling Time** 11:05 AM
Matrix Soil **Sample Location**
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/Kg	0.239	6/23/2016	MER	EPA 335.4	
%moisture	2.7	Percent		6/22/2016	MER	%moisture	

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E671099

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160617018
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1606819
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number 160617018-004 **Sampling Date** 6/14/2016 **Date/Time Received** 6/17/2016 12:00 PM
Client Sample ID 1606819-004C / WWTP-CC-8 (0-6) **Sampling Time** 11:35 AM
Matrix Soil **Sample Location**
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/Kg	0.233	6/23/2016	MER	EPA 335.4	
%moisture	3.8	Percent		6/22/2016	MER	%moisture	

Sample Number 160617018-005 **Sampling Date** 6/14/2016 **Date/Time Received** 6/17/2016 12:00 PM
Client Sample ID 1606819-005C / WWTP-CC-9 (0-6) **Sampling Time** 11:55 AM
Matrix Soil **Sample Location**
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/Kg	0.253	6/23/2016	MER	EPA 335.4	
%moisture	2.5	Percent		6/22/2016	MER	%moisture	

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; FL(NELAP):E87893; ID:ID00013; MT:CERT0026; NM: ID00013;NV: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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Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	160617018
Address:	4901 HAWKINS NE SUITE D ALBUQUERQUE, NM 87109	**Project Name:**	1606819
Attn:	ANDY FREEMAN		

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Cyanide	0.489	mg/kg	0.5	97.8	90-110	6/23/2016	6/23/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160617018-001	Cyanide	ND	12.4	mg/kg	12.8	96.9	70-130	6/23/2016	6/23/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide	11.9	mg/kg	12.8	93.0	4.1	0-25	6/23/2016	6/23/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide	ND	mg/Kg	0.5	6/23/2016	6/23/2016

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; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013;NV: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

'all Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **MB-25888** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **25888** RunNo: **35005**

Prep Date: **6/16/2016** Analysis Date: **6/20/2016** SeqNo: **1082125** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.0		10.00		90.4	70	130			

Sample ID **LCS-25888** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **25888** RunNo: **35005**

Prep Date: **6/16/2016** Analysis Date: **6/20/2016** SeqNo: **1082126** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	83.2	62.6	124			
Surr: DNOP	4.5		5.000		90.3	70	130			

Sample ID **1606819-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **WWTP-CC-5 (0-6")** Batch ID: **25888** RunNo: **35006**

Prep Date: **6/16/2016** Analysis Date: **6/20/2016** SeqNo: **1082988** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.3	46.55	0	113	33.9	141			
Surr: DNOP	4.5		4.655		95.8	70	130			

Sample ID **1606819-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **WWTP-CC-5 (0-6")** Batch ID: **25888** RunNo: **35006**

Prep Date: **6/16/2016** Analysis Date: **6/20/2016** SeqNo: **1082989** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.6	47.94	0	111	33.9	141	1.24	20	
Surr: DNOP	4.6		4.794		96.8	70	130	0	0	

Qualifiers:

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D	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	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **R35118**	RunNo: **35118**
Prep Date:	Analysis Date: **6/23/2016**	SeqNo: **1086551** 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	990		1000		99.1	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R35118**	RunNo: **35118**
Prep Date:	Analysis Date: **6/23/2016**	SeqNo: **1087474** 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	95.1	80	120			
Surr: BFB	1100		1000		114	80	120			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1606819**

all Environmental Analysis Laboratory, Inc.

26-Jul-16

Client: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**	
Client ID: **PBS**	Batch ID: **D35309**	RunNo: **35309**	
Prep Date:	Analysis Date: **6/29/2016**	SeqNo: **1092894**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	0.024	0.20								J
2-Methylnaphthalene	0.016	0.20								J
Acetone	0.088	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
ıtanone	ND	0.50								
ɔarbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.021	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	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

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D	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	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **rb** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**

Client ID: **PBS** Batch ID: **D35309** RunNo: **35309**

Prep Date: Analysis Date: **6/29/2016** SeqNo: **1092894** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	0.0075	0.10								J
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		101	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		102	70	130			
Surr: Toluene-d8	0.49		0.5000		97.3	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		97.0	70	130			

Sample ID **100ng lcs** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**

Client ID: **LCSS** Batch ID: **D35309** RunNo: **35309**

Prep Date: Analysis Date: **6/29/2016** SeqNo: **1092900** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	70	130			
Toluene	0.87	0.050	1.000	0	87.2	70	130			
Chlorobenzene	0.89	0.050	1.000	0	88.7	70	130			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **100ng lcs**	SampType: **LCS**			TestCode: **EPA Method 8260B: Volatiles**						
Client ID: **LCSS**	Batch ID: **D35309**			RunNo: **35309**						
Prep Date:	Analysis Date: **6/29/2016**			SeqNo: **1092900**		Units: **mg/Kg**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.97	0.050	1.000	0	96.8	70	130			
Trichloroethene (TCE)	1.0	0.050	1.000	0	101	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		102	70	130			
Surr: Toluene-d8	0.47		0.5000		94.1	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **mb-26053**	SampType: **MBLK**	TestCode: **Method 8260B/5035LOW: VOLATILES**	
Client ID: **PBS**	Batch ID: **26053**	RunNo: **35168**	
Prep Date: **6/24/2016**	Analysis Date: **6/24/2016**	SeqNo: **1087841**	Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	2.00								
Toluene	ND	2.00								
Ethylbenzene	ND	2.00								
Methyl tert-butyl ether (MTBE)	ND	2.00								
1,2,4-Trimethylbenzene	ND	2.00								
1,3,5-Trimethylbenzene	ND	2.00								
1,2-Dichloroethane (EDC)	ND	2.00								
1,2-Dibromoethane (EDB)	ND	2.00								
Naphthalene	ND	2.00								
1-Methylnaphthalene	ND	4.00								
2-Methylnaphthalene	ND	4.00								
Acetone	ND	10.0								
Bromobenzene	ND	2.00								
Bromodichloromethane	ND	2.00								
Bromoform	ND	2.00								
Bromomethane	ND	3.00								
2-Butanone	ND	10.0								
Carbon disulfide	ND	10.0								
Carbon tetrachloride	ND	2.00								
Chlorobenzene	ND	2.00								
Chloroethane	ND	2.00								
Chloroform	ND	2.00								
Chloromethane	ND	2.00								
2-Chlorotoluene	ND	2.00								
4-Chlorotoluene	ND	2.00								
cis-1,2-DCE	ND	2.00								
cis-1,3-Dichloropropene	ND	2.00								
1,2-Dibromo-3-chloropropane	ND	2.00								
Dibromochloromethane	ND	2.00								
Dibromomethane	ND	2.00								
1,2-Dichlorobenzene	ND	2.00								
1,3-Dichlorobenzene	ND	2.00								
1,4-Dichlorobenzene	ND	2.00								
Dichlorodifluoromethane	ND	2.00								
1,1-Dichloroethane	ND	2.00								
1,1-Dichloroethene	ND	2.00								
1,2-Dichloropropane	ND	2.00								
1,3-Dichloropropane	ND	2.00								
2,2-Dichloropropane	ND	2.00								

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **mb-26053** SampType: **MBLK** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **PBS** Batch ID: **26053** RunNo: **35168**

Prep Date: **6/24/2016** Analysis Date: **6/24/2016** SeqNo: **1087841** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	2.00								
Hexachlorobutadiene	ND	2.00								
2-Hexanone	ND	10.0								
Isopropylbenzene	ND	2.00								
4-Isopropyltoluene	ND	2.00								
4-Methyl-2-pentanone	ND	10.0								
Methylene chloride	ND	3.00								
n-Butylbenzene	ND	2.00								
n-Propylbenzene	ND	2.00								
sec-Butylbenzene	ND	2.00								
Styrene	ND	2.00								
tert-Butylbenzene	ND	2.00								
1,1,1,2-Tetrachloroethane	ND	2.00								
1,1,2,2-Tetrachloroethane	ND	2.00								
Tetrachloroethene (PCE)	ND	2.00								
trans-1,2-DCE	ND	2.00								
ɜ-1,3-Dichloropropene	ND	2.00								
ı,ʌ,3-Trichlorobenzene	ND	2.00								
1,2,4-Trichlorobenzene	ND	2.00								
1,1,1-Trichloroethane	ND	2.00								
1,1,2-Trichloroethane	ND	2.00								
Trichloroethene (TCE)	ND	2.00								
Trichlorofluoromethane	ND	2.00								
1,2,3-Trichloropropane	ND	2.00								
Vinyl chloride	ND	2.00								
Xylenes, Total	ND	2.00								
Surr: 1,2-Dichloroethane-d4	8.40		10.00		84.0	70	130			
Surr: 4-Bromofluorobenzene	9.89		10.00		98.9	70	130			
Surr: Dibromofluoromethane	7.83		10.00		78.3	70	130			
Surr: Toluene-d8	10.3		10.00		103	70	130			

Sample ID **lcs-26053** SampType: **LCS** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **LCSS** Batch ID: **26053** RunNo: **35168**

Prep Date: **6/24/2016** Analysis Date: **6/24/2016** SeqNo: **1087842** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	8.28	2.00	10.00	0	82.8	70	130			
Toluene	9.95	2.00	10.00	0	99.5	70	130			
Chlorobenzene	10.6	2.00	10.00	0	106	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **lcs-26053** SampType: **LCS** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **LCSS** Batch ID: **26053** RunNo: **35168**

Prep Date: **6/24/2016** Analysis Date: **6/24/2016** SeqNo: **1087842** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	8.67	2.00	10.00	0	86.7	68	129			
Trichloroethene (TCE)	8.24	2.00	10.00	0	82.4	70	130			
Surr: 1,2-Dichloroethane-d4	8.57		10.00		85.7	70	130			
Surr: 4-Bromofluorobenzene	9.53		10.00		95.3	70	130			
Surr: Dibromofluoromethane	7.80		10.00		78.0	70	130			
Surr: Toluene-d8	9.95		10.00		99.5	70	130			

Sample ID **lcsd-26053** SampType: **LCS** TestCode: **Method 8260B/5035LOW: VOLATILES**

Client ID: **LCSS** Batch ID: **26053** RunNo: **35168**

Prep Date: **6/24/2016** Analysis Date: **6/24/2016** SeqNo: **1087843** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	8.09	2.00	10.00	0	80.9	70	130			
Toluene	10.3	2.00	10.00	0	103	70	130			
Chlorobenzene	10.4	2.00	10.00	0	104	70	130			
1,1-Dichloroethene	8.53	2.00	10.00	0	85.3	68	129			
Trichloroethene (TCE)	8.17	2.00	10.00	0	81.7	70	130			
Surr: 1,2-Dichloroethane-d4	8.37		10.00		83.7	70	130			
Surr: 4-Bromofluorobenzene	9.94		10.00		99.4	70	130			
Surr: Dibromofluoromethane	7.75		10.00		77.5	70	130			
Surr: Toluene-d8	10.3		10.00		103	70	130			

Qualifiers:

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

QC SUMMARY REPORT

WO#: **1606819**

ıll Environmental Analysis Laboratory, Inc.

26-Jul-16

Client: Western Refining Company
Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **mb-25938**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**	
Client ID: **PBS**	Batch ID: **25938**	RunNo: **35080**	
Prep Date: **6/20/2016**	Analysis Date: **6/22/2016**	SeqNo: **1084875**	Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	0.097	0.50								J
ɔmophenyl phenyl ether	ND	0.20								
ɹutyl 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	0.15	0.20								J
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	0.078	0.50								J

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	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **mb-25938**	SampType: **MBLK**		TestCode: **EPA Method 8270C: Semivolatiles**		
Client ID: **PBS**	Batch ID: **25938**		RunNo: **35080**		
Prep Date: **6/20/2016**	Analysis Date: **6/22/2016**		SeqNo: **1084875**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		77.6	28.3	102			
Surr: Phenol-d5	2.4		3.330		73.2	35.7	103			
Surr: 2,4,6-Tribromophenol	3.0		3.330		90.8	35.2	108			
Surr: Nitrobenzene-d5	1.4		1.670		82.7	24	118			
Surr: 2-Fluorobiphenyl	1.5		1.670		91.1	35.4	111			
Surr: 4-Terphenyl-d14	0.95		1.670		56.9	15	91.7			

Qualifiers:

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

QC SUMMARY REPORT

all Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **lcs-25938** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS** Batch ID: **25938** RunNo: **35080**

Prep Date: **6/20/2016** Analysis Date: **6/22/2016** SeqNo: **1084876** 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	65.6	45.8	99.8			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	62.4	51.5	103			
2-Chlorophenol	2.1	0.20	3.330	0	62.3	46.5	105			
1,4-Dichlorobenzene	1.0	0.20	1.670	0	60.1	45.5	103			
2,4-Dinitrotoluene	0.97	0.50	1.670	0	58.3	36	87.2			
N-Nitrosodi-n-propylamine	0.96	0.20	1.670	0	57.4	47.3	104			
4-Nitrophenol	1.9	0.25	3.330	0	58.5	47.3	95.3			
Pentachlorophenol	1.9	0.40	3.330	0	55.8	38.7	89.3			
Phenol	2.0	0.20	3.330	0	60.2	47.8	106			
Pyrene	0.99	0.20	1.670	0	59.3	33.4	105			
1,2,4-Trichlorobenzene	1.0	0.20	1.670	0	62.4	50.4	115			
Surr: 2-Fluorophenol	2.0		3.330		61.2	28.3	102			
Surr: Phenol-d5	2.1		3.330		64.5	35.7	103			
Surr: 2,4,6-Tribromophenol	2.3		3.330		69.1	35.2	108			
Surr: Nitrobenzene-d5	1.1		1.670		66.2	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		71.1	35.4	111			
ırr: 4-Terphenyl-d14	0.77		1.670		46.0	15	91.7			

Sample ID **1606819-001ams** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **WWTP-CC-5 (0-6")** Batch ID: **25938** RunNo: **35080**

Prep Date: **6/20/2016** Analysis Date: **6/22/2016** SeqNo: **1085290** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.3	0.40	1.659	0	76.8	39.3	86.4			D
4-Chloro-3-methylphenol	2.5	0.99	3.309	0	76.2	37.5	96.4			D
2-Chlorophenol	2.5	0.40	3.309	0	74.6	37.4	90.6			D
1,4-Dichlorobenzene	1.2	0.40	1.659	0	70.0	31.7	85			D
2,4-Dinitrotoluene	1.1	0.99	1.659	0	64.8	26.4	86			D
N-Nitrosodi-n-propylamine	1.2	0.40	1.659	0	70.6	43.5	83			D
4-Nitrophenol	2.4	0.50	3.309	0	72.1	32.7	98			D
Pentachlorophenol	2.3	0.79	3.309	0	69.5	26.6	87.4			D
Phenol	2.5	0.40	3.309	0	74.2	40.5	85.3			D
Pyrene	1.2	0.40	1.659	0	72.9	23.2	93.9			D
1,2,4-Trichlorobenzene	1.2	0.40	1.659	0	72.1	38.7	99			D
Surr: 2-Fluorophenol	2.3		3.309		68.5	28.3	102			D
Surr: Phenol-d5	2.5		3.309		75.9	35.7	103			D
Surr: 2,4,6-Tribromophenol	2.6		3.309		78.5	35.2	108			D
Surr: Nitrobenzene-d5	1.2		1.659		75.2	24	118			D
Surr: 2-Fluorobiphenyl	1.3		1.659		79.9	35.4	111			D

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **1606819-001ams** SampType: **MS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **WWTP-CC-5 (0-6")** Batch ID: **25938** RunNo: **35080**

Prep Date: **6/20/2016** Analysis Date: **6/22/2016** SeqNo: **1085290** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.96		1.659		57.6	15	91.7			D

Sample ID **1606819-001amsd** SampType: **MSD** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **WWTP-CC-5 (0-6")** Batch ID: **25938** RunNo: **35080**

Prep Date: **6/20/2016** Analysis Date: **6/22/2016** SeqNo: **1085291** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.3	0.40	1.668	0	77.8	39.3	86.4	1.84	30.2	D
4-Chloro-3-methylphenol	2.5	1.0	3.326	0	75.4	37.5	96.4	0.664	37.2	D
2-Chlorophenol	2.5	0.40	3.326	0	75.2	37.4	90.6	1.33	48	D
1,4-Dichlorobenzene	1.2	0.40	1.668	0	71.2	31.7	85	2.19	40.6	D
2,4-Dinitrotoluene	1.2	1.0	1.668	0	69.9	26.4	86	8.08	47.7	D
N-Nitrosodi-n-propylamine	1.2	0.40	1.668	0	71.5	43.5	83	1.73	52.5	D
4-Nitrophenol	2.4	0.50	3.326	0	73.5	32.7	98	2.42	36.6	D
Pentachlorophenol	2.3	0.80	3.326	0	69.7	26.6	87.4	0.728	65.5	D
Phenol	2.4	0.40	3.326	0	70.9	40.5	85.3	4.03	44	D
Pyrene	1.2	0.40	1.668	0	73.8	23.2	93.9	1.64	42.1	D
1,2,4-Trichlorobenzene	1.3	0.40	1.668	0	78.7	38.7	99	9.23	31.5	D
Surr: 2-Fluorophenol	2.2		3.326		64.8	28.3	102	0	0	D
Surr: Phenol-d5	2.3		3.326		70.2	35.7	103	0	0	D
Surr: 2,4,6-Tribromophenol	2.4		3.326		73.4	35.2	108	0	0	D
Surr: Nitrobenzene-d5	1.3		1.668		75.2	24	118	0	0	D
Surr: 2-Fluorobiphenyl	1.3		1.668		77.9	35.4	111	0	0	D
Surr: 4-Terphenyl-d14	0.95		1.668		56.8	15	91.7	0	0	D

Sample ID **mb-26005** SampType: **MBLK** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **PBS** Batch ID: **26005** RunNo: **35322**

Prep Date: **6/22/2016** Analysis Date: **6/29/2016** SeqNo: **1092676** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	2.2		3.330		65.0	28.3	102			
Surr: Phenol-d5	2.2		3.330		65.6	35.7	103			
Surr: 2,4,6-Tribromophenol	3.1		3.330		94.6	35.2	108			
Surr: Nitrobenzene-d5	1.2		1.670		69.5	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		71.9	35.4	111			
Surr: 4-Terphenyl-d14	1.5		1.670		88.1	15	91.7			

Qualifiers:

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

QC SUMMARY REPORT

'all Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **lcs-26005** SampType: **LCS** TestCode: **EPA Method 8270C: Semivolatiles**

Client ID: **LCSS** Batch ID: **26005** RunNo: **35322**

Prep Date: **6/22/2016** Analysis Date: **6/29/2016** SeqNo: **1092677** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	1.9		3.330		57.8	28.3	102			
Surr: Phenol-d5	2.0		3.330		59.3	35.7	103			
Surr: 2,4,6-Tribromophenol	2.5		3.330		76.1	35.2	108			
Surr: Nitrobenzene-d5	1.1		1.670		67.4	24	118			
Surr: 2-Fluorobiphenyl	1.1		1.670		67.2	35.4	111			
Surr: 4-Terphenyl-d14	1.2		1.670		70.3	15	91.7			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **MB-26037**	SampType: **MBLK**		TestCode: **EPA Method 7471: Mercury**		
Client ID: **PBS**	Batch ID: **26037**		RunNo: **35191**		
Prep Date: **6/23/2016**	Analysis Date: **6/24/2016**		SeqNo: **1088910**	Units: **mg/Kg**	

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

Sample ID **LCS-26037**	SampType: **LCS**		TestCode: **EPA Method 7471: Mercury**		
Client ID: **LCSS**	Batch ID: **26037**		RunNo: **35191**		
Prep Date: **6/23/2016**	Analysis Date: **6/24/2016**		SeqNo: **1088911**	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	102	80	120			

Qualifiers:

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

QC SUMMARY REPORT

˙all Environmental Analysis Laboratory, Inc.

WO#: **1606819**

26-Jul-16

Client: Western Refining Company

Project: WWTP Carbon Canister Confirmation Sampling

Sample ID **MB-26038** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **PBS** Batch ID: **26038** RunNo: **35227**

Prep Date: **6/23/2016** Analysis Date: **6/27/2016** SeqNo: **1089173** 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								
Lead	ND	0.25								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID **LCS-26038** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**

Client ID: **LCSS** Batch ID: **26038** RunNo: **35227**

ɜp Date: **6/23/2016** Analysis Date: **6/27/2016** SeqNo: **1089174** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	24	2.5	25.00	0	95.7	80	120			
Arsenic	23	2.5	25.00	0	93.0	80	120			
Barium	23	0.10	25.00	0	93.0	80	120			
Beryllium	24	0.15	25.00	0	97.1	80	120			
Cadmium	24	0.10	25.00	0	95.4	80	120			
Chromium	23	0.30	25.00	0	92.8	80	120			
Cobalt	23	0.30	25.00	0	90.7	80	120			
Lead	22	0.25	25.00	0	89.1	80	120			
Nickel	23	0.50	25.00	0	91.4	80	120			
Selenium	24	2.5	25.00	0	95.8	80	120			
Silver	4.8	0.25	5.000	0	95.4	80	120			
Vanadium	24	2.5	25.00	0	97.5	80	120			
Zinc	23	2.5	25.00	0	91.3	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Western Refining Gallup Work Order Number: 1606819 RcptNo: 1

Received by/date: 06/15/16

Logged By: Ashley Gallegos 6/15/2016 8:10:00 AM

Completed By: Ashley Gallegos 6/15/2016 1:02:13 PM

Reviewed By: 06/16/16

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? 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	1.2	Good	Not Present			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM. 87301
Phone #: 505-722-0217
email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____
Project Name: WNTP CARBON CANISTER CONFIRMATION SAMPLING
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.2

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1600819	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)	SKINNER LIST METALS				Air Bubbles (Y or N)
6/14/16	1030	SOIL	WWTP-CC-5(0-6")	JAR-3	NEAT	-001			✓							✓	✓	✓				
	↓	↓	↓	VIAL-2	SOBI											✓						
				VIAL-2	MEOH											✓						
	1045	SOIL	WWTP-CC-6(0-6")	JAR-3	NEAT	-002			✓							✓	✓	✓				
				VIAL-2	SOBI											✓						
				VIAL-2	MEOH											✓						
	1105	SOIL	WWTP-CC-7(0-6")	JAR-3	NEAT	-003			✓							✓	✓	✓				
				VIAL-2	SOBI											✓						
				VIAL-2	MEOH											✓						
	1135	SOIL	WWTP-CC-8(0-6")	JAR-3	NEAT	-004			✓							✓	✓	✓				
				VIAL-2	SOBI											✓						
				VIAL-2	MEOH											✓						

Date:	Time:	Relinquished by:	Received by:	Date	Time
6/15/16	0810	[signature]	[signature]	06/15/16	0810
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.

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.
GALLUP REFINERY
Mailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
Phone #: 505-722-0217
email or Fax#: ED.RIEGE@WNR.COM
QA/QC Package:
☐ Standard ☒ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☒ EDD (Type) EXCEL

Turn-Around Time:
☒ Standard ☐ Rush _____
Project Name: WWTP CARBON CANISTER CONFIRMATION SAMPLING
Project #:
Project Manager: ED RIEGE
Sampler: TRACY PAYNE
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.2

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1606089	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)	BKINNER LIST METALS				Air Bubbles (Y or N)
6/14/16	1155	SOIL	WWTP-CC-9(0-6")	3 JARS	NEAT	-005			✓						✓	✓	✓	✓				
↓	↓	↓	↓	VIAL-2	SOBI											✓						
				VIAL-2	MEOH											✓						
6/14/16	—	MEOH	MEOH BLANK	VIAL-2	MEOH	-006										✓						

Date:	Time:	Relinquished by:	Received by:	Date	Time
6/15/16	0810	[signature]	[signature]	06/15/16	0810
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.

ATTACHMENT 1

Region 5 Waste Management Branch "Skinner List"
Constituents of Concern for Wastes from Petroleum Processes

Inorganics

Antimony	Cadmium	Lead	Silver
Arsenic	Chromium	Mercury	Vanadium
Barium	Cobalt	Nickel	Zinc
Beryllium	Cyanide	Selenium	

Volatile Organics

Benzene	1,2-Dichloroethane	Ethylene dibromide (EDB)	1,1,1-Trichloroethane
Carbon disulfide	1,1-Dichloroethane	Methyl ethyl ketone (MEK)	Trichloroethene
Chlorobenzene	1,4-Dioxane	Styrene	Tetrachloroethylene
Chloroform	Ethylbenzene	Toluene	Xylenes (total)

Semivolatile Organics

Acenaphthene	o-Cresol	Diethyl phthalate	Naphthalene
Anthracene	m-Cresol	2,4 Dimethylphenol	4-Nitrophenol
Benzo(a)anthracene	p-Cresol	Dimethyl phthalate	Phenanthrene
Benzo(b)fluroranthene	Dibenz(a,h)anthracene	2,4 Dinitrophenol	Phenol
Benzo(k)fluoranthene	Di-n-butyl phthalate	Fluoranthene	Pyrene
Benzo(a)pyrene	1,2-Dichlorobenzene*	Fluorene	Pyridine
Bis(2-ethylhexyl) phthalate	1,3-Dichlorobenzene*	Indeno(1,2,3-cd)pyrene	Quinoline
Chrysene	1,4-Dichlorobenzene*	Methyl tertiary butyl ether (MTBE)	*- can be tested as a volatile

Low Concentration Polynuclear Aromatic Hydrocarbons (Optional)

Benzo(a)anthracene	Benzo(k)fluoranthene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene
Benzo(b)fluoranthene	Benzo(a)pyrene	Chrysene*	

* added to this group to assist the chromatographic resolution of chrysene from Dibenz(a,h)anthracene in sample extracts

Optional Semivolatile Organics

~~Indene~~ no ✓	~~Benzenethiol**~~ no ✓	~~Dibenz(a,h)acridine~~ no ✓	1-Methylnaphthalene*

*Note that 2-Methylnaphthalene is part of Appendix IX and is a CLP TCL organic. 1-Methylnaphthalene is not on these lists.

**Benzenethiol can be detected in certain petroleum refinery wastes. Its measurement must compensate for its instability at neutral and acid pH values during sample preparation and its unstable instrument calibration standards