



Region 6 Compliance Assurance and Enforcement Division  
**INSPECTION REPORT**

Inspection Date(s):		08/08/2014 through 08/14/2014	
Media:		RCRA -- Hazardous Waste	
Regulatory Program(s)		RCRA LQG Compliance / RCRA Corrective Action	
Company Name:		Western Refining Southwest, Inc.	
Facility Name:		Gallup Refinery	
Facility Physical Location:		1-40 Exit 39, 17 Miles East of Gallup, GPS Coordinates: 35°29'14"N 108°25'36"W	
(city, state, zip code)		Gallup, New Mexico 87031	
Mailing address:		92 Giant Crossing Road	
(city, state, zip code)		Gallup, New Mexico 87031	
County/Parish:		McKinley County	
Facility Contact:		Ed Riege ed.Riege@wnr.com	Environmental Manager (505) 722-0217
FRS Number:		110015742703	
Identification/Permit Number:		NMED Permit No. OMB# 2050-0024	
Media Number:		RCRA No. NM000333211	
NAICS:		324110 - Petroleum Refining	
SIC:		2911 - Petroleum Refining	
Facility Representatives:		Mr. Ed Riege Mr. Beck Larsen Mr. Allen Hains Mr. Vic McDaniel Mr. Erik Loera Mr. Alvin Dorsey Ms. Janice Sanchez Mr. Scott Crouch	Environmental Manager Environmental Engineer Manager - Remediation Projects Assist. Refinery Manager WWTP Supervisor Environmental Specialist Environmental Technician Consultant (DiSorbo Consulting, LLC)
EPA Inspectors:		Mr. Paul James Mr. Wm. Mansfield Mr. Charles Barnes	R6 Hazardous Waste Enforcement R6 Hazardous Waste Enforcement R6 Hazardous Waste Enforcement
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EPA Lead Inspector Signature/Date	 Mr. Paul D. James, Jr., P.G.		11/6/2014 Date
Supervisor Signature/Date	 Dr. H. Troy Stuckey, PhD		11/6/14 Date

## SECTION I - INTRODUCTION

### Purpose of the Inspection

EPA Region 6 inspectors Mr. Paul James, Mr. William "Bill" Mansfield, and Mr. Charles "Chuck" Barnes arrived at the Gallup Refinery (Facility) at 7:28 on August 12, 2014 for an unannounced RCRA inspection to evaluate both RCRA corrective actions and RCRA compliance. The facility had not been inspected within the previous 24 months.

I, Paul James, along with Mr. Mansfield and Mr. Barnes met with Mr. Ed Riege, Environmental Manager and Mr. Beck Larsen, Environmental Engineer at the opening conference. We presented our credentials to Mr. Riege and Mr. Beck and informed them that this was an EPA RCRA inspection. I handed Mr. Riege a copy of the RCRA Section 3007 that explains EPA's authority to conduct the inspection. Additionally, I explained their options to claim confidential business information (CBI). No CBI was claimed at the time of the opening conference but later in the inspection CBI was claimed on the Macro Porous Polymer Extraction (MPPE) portion of the waste water treatment plant. No state agency personnel were involved in this inspection.

The scope of the inspection was to conduct the following:

1. Visually inspect the Solid Waste Management Units (SWMU) and Areas of Concern (AOC) defined in Final RCRA Post-Closure Care Permit dated October 2013 (2013 Post-Closure Permit);
2. Evaluate corrective actions taken/completed and compliance actions taken pursuant to Federal Regulations under RCRA Corrective Action, and the 2013 Post-Closure Permit;
3. Visually inspect the Waste water Treatment Plant pursuant to Federal Regulations under RCRA Compliance; and
4. Collect environmental and/or hazardous waste determination samples.

### Facility Description

The Gallup Refinery is a small crude oil refinery (23,000 barrels per day) located in McKinley County, New Mexico approximately 17 miles east of Gallup, NM at Exit 39 off of Interstate 40 (I-40), Jamestown, New Mexico. The facility is manned 24 hours a day, 7 days per week, 365 days per year operating on two shifts with approximately 225 full time employees with approximately 35 dedicated contract employees.

Based on the Final 2013 Permit, the Facility was constructed in 1957 by El Paso Natural Gas Company near a railroad depot known locally as "Ciniza." The refinery was purchased and operated by Shell Oil Company until 1982 when it was purchased by Giant Industries Arizona, Incorporated which owned and operated the Facility until May 2007. Western Refining Southwest, Incorporated acquired Giant Industries and currently operates the Facility as Gallup Refinery.

The refinery is situated on an 810 acre tract of land. The surrounding land is comprised primarily of public lands and is used for cattle and sheep grazing. The nearest population centers include: refinery maintained residences for several employees approximately 0.5 mile south of the refinery process area; a truck stop located within one mile south-southwest of the process area at the I-40 exit; a rural

residential area, Whispering Cedars, with a density of eight to 10 residents per square mile is located about 1.5 miles southwest of the refinery; Iyanbito, a small community, is located within three miles northwest of the refinery; Fort Wingate Military Reservation is within six miles west of the refinery. The largest residential community near the refinery is the city of Gallup, NM which is 17 miles west of the refinery.

The facility receives crude oil via two 6-inch diameter pipelines; the Bisti Pipeline comes from the Four Corners area and enters the refinery property from the north and the Hospah Pipeline comes in from the northeast and is an interconnection with a main interstate pipeline. The refinery also receives natural gas condensate feed-stocks via a 4-inch diameter pipeline that comes in from the west along the I-40 corridor from the Conoco gas plant. Crude oil and other products also arrive at the site via railroad cars. These feed-stocks are sorted into tanks until refined into final products which include propane, butane, naphtha, unleaded gasoline, diesel (low sulfur and ultra-low sulfur), and residual fuel.

The refinery has various processing units that convert crude oil and natural gasoline into finished products. These units include the crude distillation unit which separates crude oil into various fractions including gas, naphtha, light oil, and residuals.

## **SECTION II – OBSERVATIONS**

### **Day 1 of the Inspection**

#### Site Entry and Opening Conference

Upon site entry, the EPA inspection team had to undergo Western's site safety training prior to beginning the inspection. That process took approximately 30 minutes. The Opening Conference with Western personnel began at 0800 on Tuesday, 12 August 2014. Western personnel in attendance at the Opening Conference were Mr. Riege and Mr. Larsen.

EPA's inspection team, presented credentials to Mr. Riege and Mr. Larsen. I informed them that this was an EPA RCRA inspection. I handed Mr. Riege a copy of the RCRA Section 3007 that explains EPA's authority to conduct the inspection. Additionally, I explained Western's right to claim confidential business information (CBI). No CBI was claimed during the opening conference.

According to Mr. Riege, the Western Gallup Refinery (Facility) is a large quantity generator only. The Facility employs 225 full time personnel and 35 dedicated contract employees. The Facility operates 24 hours per day, seven days a week, and 365 days per year on two shifts from 0600 to 1800 and from 1800 to 0600.

According to Mr. Riege and Mr. Larsen, the waste water treatment plant (WWTP) was constructed in 2012. The WWTP is a new addition to the facility and was constructed in response to conditions in a RCRA 3008(a) CAFO.

Confidential Business Information (CBI) was discussed and Western was asked to identify any CBI before it was given to EPA.

The facility has only one EPA ID number NM000333211. The facility has a storm water discharge permit with two outfall points; one on the west side of the facility and one on the east side of the facility. Storm water falling inside the process area is combined with the process waters and sent through the

process area. According to Mr. Riege and Mr. Larsen, segregation of storm water and process water would be an almost impossible tasking.

The facility was issued a RCRA Post Closure Permit in December 2013 by the New Mexico Environmental Department (NMED). The purpose of the permit was to establish a compliance schedule to remediate and track Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs). Western has filed an appeal over the permit issuance because the AOCs were included without Western's involvement/participation and Western believes the AOCs listed are questionable. According to Mr. Riege, Western is following the terms of the Permit in the intervening period while awaiting a decision on the permit appeal.

The WWTP also operates 24 hours per day, seven days a week, with 2 to 3 people per shift. Discharge from the WWTP is sent to surface impoundments that are constructed of natural materials (local clay soils). According to Western, the clay used to construct these structures has hydraulic conductivity in the  $1.0 \times 10^{-4}$  to  $1.0 \times 10^{-8}$  cm/s range.

Photography permits and area entry permits were required of EPA personnel prior to conducting the inspection. This requirement is part of Western's safety program in order to assure non-sparking equipment is used and to maintain a positive list for personnel, knowing where everyone is in case of emergency and being able to account for everyone on the site.

During the facility discussions, the following documents were requested:

1. Copies of active permits
2. Updated P&ID for the WWTP
3. A map showing the locations of all SWMUs and AOCs.
4. Copies of any air emission studies conducted for the waste management processes, SWMUs, and AOCs
5. Groundwater Monitoring Program analytical results, and reports
6. Groundwater Monitoring Plan
7. Lagoon studies showing VOC analysis for 2012-2013
8. As built P&ID for the WWTP
9. P&ID for production operations
10. Filter press sludge shipping documents
11. Hazardous Waste manifests for the past 12 months
12. GAC shipment documents for the past 12 months

The Opening Conference ended at 0830. The day included reviewing and inspecting the WWTP, SWMUs, and AOCs.

Between 8:30 and 9:53, we obtained access approvals and photography permits. All EPA photographs are presented as Appendix 1 and Appendix 2 to this report. We arrived with Mr. Riege at the WWTP at 9:53 a.m. We spoke with the WWTP operator on duty, Mr. Cipriano Garcia. According to Mr. Garcia, the WWTP operators are trained in the operational functions for the WWTP. The operators are not state certified WWTP operators. The facility does not have a National Pollution Elimination Discharge System (NPEDS) permit as the determination has been made by EPA that the facility does not discharge to the waters of the United States. The WWTP has two personnel on duty for each shift. Mr. Garcia led a tour

of the WWTP and explained the processes. A hard copy of the WWTP flow diagram was obtained and is Appendix 2 to this report.

WWTP Process Flow Discussion and Observations:

This discussion included Western personnel Mr. Riege, Mr. Larsen and Mr. Garcia, and EPA inspectors. According to the Western personnel, the following steps are involved in the treatment process:

1. Waste water and storm water from the process areas flow to equalization/storage tanks T27, T28 and/or T35 then through the API separator. The tanks provide an element of solids settling and phase separation for petroleum products. The API separator is a dual chamber unit. At the time of the inspection, one side of the API separator was down for maintenance and all water was flowing through the single remaining chamber.
2. From the API separator, the water flows to the Dissolved Gas Flotation (DGF) Feed Tank/Clarifier where coagulants and flocculants are added, thence to the DGF tank where solids and petroleum products are skimmed off/decanted to the float tank where solids are skimmed off and sent off site for disposal. Dissolved gases are vented through carbon and hydrogen-sulfide canisters to the atmosphere. During the inspection, a strong odor of hydrogen sulfide was noted indicating a potential process problem.
3. Solids from the API separator, the DGF Feed Tank and the Float Tank are processed through a filter press. Liquids are reintroduced to the treatment process waters while solids are placed in a 30-40 cubic yard roll-off box for disposal off site. During the inspection, it was noted that the filter press and its associated roll-off box had no secondary containment.
4. From the DGF clarifier, waste water flows through two parallel sets of cartridge filter vessels; one set of 250 micron pore size and one set of 10 micron pore size. The parallel placement of the filter vessels were designed to maintain treatment/flow during filter change outs. According to Mr. Garcia, these filters are changed 3 to 4 times per day, sometimes more often, depending on the production operations.
5. From the filter vessels, the waste water is diverted to flow (parallel) through the Macro-Porous Polymer Extraction (MPPE) chamber and/or through two large Granular Activated Carbon (GAC) canisters in series.
6. For the MPPE chamber, steam is introduced to heat the vessel and volatiles are vented to the facility flare. According to Mr. Garcia, the MPPE unit has to be cleaned out pending on the amount of sulfur in the waste water.
7. For GAC treatment, waste water flows through both canister in series. According to Mr. Garcia and Mr. Riege, the GAC canisters were installed 9-12 months ago. Per Mr. Garcia, the waste water does not go through the GAC unit except when the MPPE is not removing benzene to a level below 5 ppm; only then does the waste water process through the GAC canisters.
8. The Sanitary Treatment Pond (STP-1) is a set of aeration lagoons that receive process waste water from the WWTP, sanitary sewer from the facility, and sanitary sewer from the Pilot Travel Center, a neighboring truck stop. STP-1 consist of two long aeration cells. The cells have

mechanical aerators to facilitate atmospheric off gassing. Hydrogen sulfide levels at STP-1 are very high as noted by odor and instrumentation. EPA's MSA Sirius meter showed in excess of 5 ppm as noted by Bill Mansfield during this part of the inspection. The facility's air monitoring units showed comparable results.

9. STP-1 water then empties into the evaporation ponds for final placement. It was noted that the water in evaporation ponds 2 and 3 had a pink hue. The reason for the color is unknown as inquiry was made to Mr. Riege. Later, it was disclosed that the pink hue was due to higher turbidity (local red/pink clay particles suspended in the water).

During the inspection of the WWTP, the GAC canisters and the filter canisters were not shown on the current P&ID diagrams. This was noted to Mr. Riege and Mr. Garcia, and Mr. Riege told us that they would make updates to the drawings before we finish the inspection.

All materials (volatiles) from the refining operation and the WWTP are routed through the flare at the facility according to Mr. Riege.

During the inspection of the WWTP, none of the storage/treatment units were labeled as Hazardous Waste units.

While driving by equalization/storage tanks T27, T28 and/or T35, the inspection team noted that the tanks were not labeled as Hazardous Waste units. I asked Mr. Riege why the tanks are not labeled as such, and Mr. Riege stated that the tanks are part of the waste water treatment. Subsequently, I asked if the WWTP has any permit, and Mr. Riege stated that the WWTP has no permit. Later, I asked where does the treated waste water finally end up, and Mr. Riege stated that the treated waste water ends up in the evaporation ponds and does not leave the refinery's property.

#### 90-Day Hazardous Waste Storage Area Observation:

The inspection team and Mr. Riege met with Mr. Alvin Dorsey at the 90-Day hazardous waste storage area. This area sits on a concrete pad of approximately 45 feet by 45 feet in size. The storage area is enclosed with a chain-linked fence with a locked gate.

The following are regulatory concerns noted during the inspection:

1. One hazardous waste container was leaking (55-gallon steel drum) onto the surface of the containment area.
2. 12 containers with Hazardous Waste labels showed accumulation date of "5/2/2014" which exceeds the 90-day storage limit.
3. Hazardous waste containers had improper aisle spacing between them.

The following are non-regulatory safety/housekeeping concerns noted during the inspection:

4. Empty containers (drums and totes) were stored in the hazardous waste storage area.
5. Nonhazardous waste was stored in the Hazardous Waste storage area.
6. Containers with waste were not covered. These wastes were reported as nonhazardous waste.

These six concerns with the hazardous waste storage area were photo-documented and presented in Appendices 1 and 2.

**Corrective Action Facility Tour**

During the RCRA corrective action facility tour, photographs were taken and are presented in Appendices 1 and 2. All SWMUs and AOCs identified in the 2013 Post-Closure Permit were inspected during the facility tour. Table 1 identifies the units/areas inspected during the facility tour:

Table 1  
List of SWMU and AOC at Gallup Refinery

Note:  = Visually inspected during our facility tour.

Unit ID / Description	Corrective Action Descriptions / Observations
<input checked="" type="checkbox"/> SWMU 1 - Aeration Basins	Investigation Report submitted to NMED. Facility plan is to close in place. During this inspection, stained soil and pooling of liquid was noted.
<input checked="" type="checkbox"/> SWMU 2 - Evaporation Ponds	Work Plan Submittal Date: January 31, 2021. During this inspection, all ponds were intact. Moisture on lower portion of the back walls were noted though, signifying potential leaching. At Pond P-2, a pinkish hue was noted in the water, potentially elevated turbidity from suspended clays.
SWMU 3- Empty Container Storage Area (ECSA) / Heat Exchanger Bundle Cleaning Pad	Work plan submitted to NMED. The area previously used as the ECSA is no longer being used to store empty drums. The area has been closed, a new concrete containment pad has been installed, and the site is now occupied by a heat exchanger cleaning pad. This area was not inspected, but the inspection team did go by the SWMU and noted no concerns.
<input checked="" type="checkbox"/> SWMU 4 - Old Burn Pit	Work plan submitted to NMED. SWMU 4 consists of the old burn pit located approximately 700 feet north of the tank farm and west of the fire training area. The old burn pit area is a triangular site measuring approximately 20 feet by 40 feet and was used to burn acid-soluble oils. During this inspection, it was noted that the area has been capped with native soil and left undisturbed.
<input checked="" type="checkbox"/> SWMU 5 - Landfill Areas	Work plan submitted to NMED. The landfills were used to dispose of non-regulated materials from refinery construction, maintenance, and operational activities, but have been inactive since the early 1980s. These landfill areas are reported to contain inorganic, nonhazardous solid waste and debris from refinery construction, maintenance, and operational activities. During this inspection, it was noted that the area has been capped with native soil and left undisturbed.
SWMU 6 - Tank Farm	Work Plan Submittal Date: December 31, 2019. This area is still an active tank farm consisting of approximately 42 above ground storage tanks. The SWMU consist of several impacted areas within the tank farm. The SWMU was not inspected, but the inspection team did go through the area several times and no visual concerns were noted.

Unit ID / Description	Corrective Action Descriptions / Observations
<input checked="" type="checkbox"/> SWMU 7 - Fire Training Area	<p>Work Plan Submittal Date: March 31, 2015. SWMU 7 is adjacent to (east of) the current fire training area. It is a rectangular flat site measuring approximately 50 feet wide by 80 feet long. Contaminated soils and structures have been removed from the SWMU. During this inspection, it was noted that the area is now flat, barren and not in use. No visual concerns were noted with this SWMU, but the current fire training area had several concerns.</p>
<input checked="" type="checkbox"/> SWMU 8 - Railroad Rack Lagoon and Fan-Out Area	<p>Investigation/Remediation Report submitted to NMED. The overflow ditch and fan-out area was used to manage overflow when the railroad rack lagoon was filled beyond capacity. The railroad rack lagoon has not been used since the mid-1980s. . During this inspection, it was noted that the area is now flat, barren and not in use. No visual concerns were noted with</p>
<input checked="" type="checkbox"/> SWMU 9 - Drainage Ditch and Inactive Land-farm	<p>Work Plan Submittal Date: June 30, 2015. The inactive land treatment farm and associated drainage ditch were placed in service in 1958. Land treatment area operations were discontinued in the early 1980s. Oily wastes were formerly biodegraded on this site. During this inspection, it was noted that the area is now flat, barren and not in use. No visual concerns were noted with this SWMU. But adjacent to this area to the west, an underground storage tank was identified with the manhole cover open and an unidentified liquid within. When I asked Mr. Riege about the tank, he stated this was his first time seeing it.</p>
<input checked="" type="checkbox"/> SWMU 10 - Sludge Pits	<p>Work Plan Submittal Date: September 20, 2014. SWMU No. 10, Sludge Pits, (Figure 10-1) consists of two former API separator sludge pits. The sludge pit area is an oblong flat site measuring approximately 120 feet wide by 200 feet long. Within this area, two pits were previously excavated and filled with oily waste from the API separator. In 1980, the sludge was removed from the pits and replaced with clean fill soil. The site was then covered with a layer of clean soil. During this inspection, it was noted that the area is now barren with only utility poles and line running through it. No visual concerns were noted with this SWMU.</p>
SWMU 11 - Secondary Oil Skimmer	<p>Work Plan Submittal Date: December 31, 2015. SWMU No. 11 consists of the secondary oil skimmer located south of the main evaporation ponds. The secondary oil skimmer site is a rectangular area measuring approximately 10 feet wide by 25 feet long, and centered over an earthen storm water drainage ditch. Within this area, a steel box was previously installed and used to collect suspended oil and sediment from storm water flowing through the ditch. This area was not inspected, but the inspection team did go by the SWMU and noted no concerns. No equipment was present.</p>

Unit ID / Description	Corrective Action Descriptions / Observations
SWMU 12 – Contact Waste-water Collection System	Work Plan Submittal Date: March 31, 2016. SWMU No. 12 was a component of the refinery wastewater treatment system. It consisted of a network of underground piping and catch basins that are located beneath various refinery processing units and are used to collect process wastewater. This wastewater flows by gravity through the system to the old API oil/water separator. During this inspection, the API is no longer used and the lines are shut off. Die testing of the lines were conducted showing some issues of leaking. Mr. Riege stated that the underground lines are being repaired/replaced.
<input checked="" type="checkbox"/> SWMU 13 - Drainage Ditch Between API Evap. Ponds and Neutralization Tank Evap. Ponds	Work Plan Submittal Date: June 30, 2016. SWMU No. 13 consists of the small overflow lagoon, known as Pond No. 10, and its associated drainage ditch. The drainage ditch is a component of the refinery wastewater treatment system. Effluent water from Evaporation Pond No. 10 is conveyed along the ditch and distributed to north area evaporation ponds. SWMU No. 13 consists of a man-made earthen channel measuring approximately 20 feet wide by 120 feet long. During this inspection, these channels appeared not to be in use. No visual concerns were noted.
<input checked="" type="checkbox"/> SWMU 14 - Old API Separator	Investigation Report submitted to NMED. This SWMU is located south of the new API units. During our inspection, this SWMU was no longer in service and appeared to have been removed. When asked about the water going to this unit, Mr. Riege stated that all water has been shut off to this unit.
<input checked="" type="checkbox"/> AOC 15 - New API Separator	Work Plan Submittal Date: September 30, 2016. The new API separator consists of two parallel units, approximately 45ft x 8ft x 5ft in dimensions. During this inspection, one unit was open and shut down for maintenance. No visual concerns were noted.
<input checked="" type="checkbox"/> AOC 16- New API Separator Overflow Tanks	Work Plan Submittal Date: September 30, 2016. Currently the AOC consists of two frac-tanks. During this inspection, these tanks were not labeled as hazardous waste. Mr. Riege stated that the tanks are part of the process. It was also noted that the tanks did not have adequate secondary containment.
<input checked="" type="checkbox"/> AOC 17 - Railroad Loading/Unloading Facility	Release Assessment Submittal Date: December 31, 2016. During this inspection, no visual concerns were noted. The inspection team did collect a water sample of the AOC's sump on the second day of the inspection and sent the sample to the NMED contracted lab for analysis.
AOC 18 - Asphalt Tank Farm (tanks 701-709, 713, 714)	Work Plan Submittal Date: June 30, 2017. The Asphalt Tank Farm is located south of the process units and consists of ten above ground storage tanks within one secondary storage berm. During this inspection, the AOC was not inspected, but the inspection team did go by the area several times and no visual concerns were noted.

Unit ID / Description	Corrective Action Descriptions / Observations
AOC 19 - East Fuel Oil Loading Rack	Release Assessment Submittal Date: June 30, 2017. The East Fuel Oil Loading Rack was located north of the Asphalt Tank Farm, AOC 18. During the inspection, this AOC was not inspected.
<input checked="" type="checkbox"/> AOC 20 - Crude Slop and Ethanol Unloading Facility	Release Assessment Submittal Date: September 30, 2017. This area is located northwest of the main loading racks (AOC 21). During this inspection, a tanker truck was beginning to unload. No visual concerns were noted.
<input checked="" type="checkbox"/> AOC 21 - Main Loading Racks	Release Assessment Submittal Date: December 31, 2017. This area consists of approximately five loading bays. Trucks were present and loading during the inspection. No visual concerns were noted.
<input checked="" type="checkbox"/> AOC 22 - Loading Rack Additive Tank Farm	Work Plan Submittal Date: March 31, 2018. This area is located west of Mail Loading Racks (AOC 21) and consist of approximately ten additive tanks and an unloading/loading area. During this inspection, no concerns were noted other than the concrete secondary containment joints around Tanks 901 and 902, where the joint compound appeared to be weathering and may not retain product during an inadvertent spill.
<input checked="" type="checkbox"/> AOC 23 - Retail Fuel Tank Farm (tanks 1-7, 912, 913, 1001, 1002)	Work Plan Submittal Date: March 31, 2018. There are eight product tanks located in this area, residing in one earthen secondary containment. During this inspection, several monitoring wells were identified in the area around the tank farm, and one monitoring well located inside the containment area with a potential issue. The riser pipe, "stickup," on the well is below the berm height of the secondary containment. If a release occurred, the well could act as a conduit for product to enter the baring groundwater unit. A remedy was suggested to Mr. Riege to extend the riser pipe above the berm height.
AOC 24 - Crude Oil Tank Farm (tanks 101 and 102)	Work Plan Submittal Date: June 30, 2018. There are two large crude tanks located in this area, residing in one earthen secondary containment. During this inspection, the AOC was not inspected, but the inspection team did go by the area several times and no visual concerns were noted.
AOC 25 - Tank 573 (Kerosene tank)	Release Assessment Submittal Date: December 31, 2016. This area is located on the south side of the Railroad Loading/Unloading Facility (AOC 17). During this inspection, the AOC was not inspected, but the inspection team did go by the area several times and no visual concerns were noted.
AOC 26 - Process Units	Release Assessment Submittal Date: April 30, 2021. During this inspection, the AOC was not inspected, but the inspection team did go by the area several times and no visual concerns were noted.

Unit ID / Description	Corrective Action Descriptions / Observations
AOC 27 - Boiler and Cooling Unit Area	Release Assessment Submittal Date: September 30, 2018. The Boiler and Cooling Unit Area is divided into two areas and both are adjacent to the processing area. During this inspection, the AOC was not inspected, but the inspection team did go by the area several times and no visual concerns were noted.
AOC 28 - Warehouse and Maintenance Shop Area	Release Assessment Submittal Date: December 31, 2018. This area consists of four buildings: a warehouse, an electrical shop, mechanical shop, and a pipe/welding shop. During this inspection, these buildings were not inspected.
AOC 29 - Equipment Yard and Drum Storage Area	Release Assessment Submittal Date: March 31, 2019. The Equipment Yard and Drum Storage Area is small yard adjacent to the warehouse (AOC 28). During this inspection, the AOC was not inspected, but the inspection team did go by the area several times and no visual concerns were noted.
<input checked="" type="checkbox"/> AOC 30 – Laboratory	Release Assessment Submittal Date: June 30, 2019. The laboratory is adjacent to the warehouse (AOC 28) and it provides preliminary analysis of water from the WWTP as well as for product analysis. Additional compliance samples are sent to an off-site lab for analysis. All WWTP sample remains are put down the drain and sent to the WWTP for treatment/disposal. During this inspection, no visual concerns were noted.
<input checked="" type="checkbox"/> AOC 31 - Tanks 27 and 28	Work Plan Submittal Date: September 30, 2019. Tanks T-27 and T-28 are waste water overflow tanks prior to the waste water going into the API oil/water separators. During this inspection, it was noted that these tanks, as well as equalization tank T-35, were not labelled as hazardous waste. No other visual concerns were noted.
AOC 32 - Flare and Ancillary Tanks (tanks Z85V2, V85V3, Z84-T105)	Work Plan Submittal Date: December 31, 2019. During this inspection, the AOC was not inspected, but the inspection team did go through the area several times and no visual concerns were noted.
<input checked="" type="checkbox"/> AOC 33 - Storm Water Collection System	Work Plan Submittal Date: December 31, 2019. During this inspection, the team inspected both storm water outfalls as well as some of the storm water ditches and ponds. No concerns were noted during this inspection.
<input checked="" type="checkbox"/> AOC 34 - Scrap Yard	Work Plan Submittal Date: June 30, 2020. This AOC is located north of the bulk storage tanks between SWMU 5 and SWMU 7. During this inspection, the inspection team travelled several times through the AOC, and no visual concerns were noted.

During the facility tour/overview, the inspection team spoke with Mr. Tim Coley, Lab Manager. This laboratory provides preliminary analysis of water from the WWTP. Additional compliance samples are sent to an off-site lab for analysis. All sample remains are poured down the drain which goes to the WWTP for treatment/disposal.

During the facility tour/overview, the inspection team spoke with Mr. Cipriano Garcia, WWTP Manager. Mr. Garcia mentioned that Tanks T-27, T-28, and T-35, were last cleaned approximately 3 years ago. These tanks have internal floating roofs. According to Garcia, the WWTP operates with a pH range between 5 & 11 with the target pH as 7.0. Normally, the facility operates around 8.0 pH. The treatment processes are sampled and analyzed at the on-site lab as previously identified. The color of the sample collected had a yellowish tint. Regulatory compliance samples are sent to Hall Environmental in Albuquerque, NM. The normal through put for the WWTP is approximately 200 GPM.

During the facility tour/overview, the inspection team spoke with Mr. Riege concerning AOC -16- New API Separator Overflow Tanks which are two frac-tanks. The tanks were the source of a spill during the week of 3-9 August 2014. The tanks overflowed and the materials discharged to a storm drain. These tanks are normally used to contain water from the process and decant oil/grease/light ends. The tanks have been in the process line for about 18 months. Secondary containment around these tanks is not adequate and was noted to Mr. Riege. The release from the FRAC tanks was approximately one-half mile long and was contained on-site. Materials from the spill were collected and sent off site for disposal.

The GAC canisters have been in the process for about 1 year according to Mr. Garcia and Mr. Riege. There is no secondary containment around the GAC units. The GAC units are recharged about every 10 days or more often if necessary to maintain the regulatory/permit requirement for less than 5 ppm benzene.

The evaporation ponds have aerators in place to enhance VOC removal. According to Mr. Riege, this activity has an air emissions permit.

Per Mr. Riege, surface impoundments, land treatment unit, and landfill do not have synthetic liners; only natural clay liners. There is no specific monitoring for the land treatment unit or the landfill. The entire facility is monitored for groundwater contamination.

Ponds AL1 and AL2 have had draft closure plans submitted to NMED within the past 18 months. Western is waiting for comments/approval/disapproval from NMED prior to proceeding with closure for these ponds.

Sanitary sewage flows into STP-1 and the only treatment in this pond are aerators. Sanitary sewage from within the facility are mixed with process and storm water (that has fallen within the process area) prior to treatment in the WWTP. Sanitary and storm water from the Pilot Truck Terminal immediately adjacent to the Western Refinery also flows to STP-1. This is a contractual arrangement for the refinery purchase when Western bought the facility from Giant. The Pilot facility was a Giant truck stop at the time of the refinery purchase according to Mr. Riege.

During the facility tour, a treatment unit for Acid Solidified Oil (ASO) was observed. According to Mr. Riege, this is a process that was conducted by a contractor; Chemical Transportation, Inc. (CTI). The ASO was treated and solidified with soda ash and lime, then sent to another facility for recovery. CTI is an environmental transportation services company. Telephone 888-444-7077. The trailer holding the equipment had Arizona registration plates. At this point, Western considered the ASO a waste.

## **Day 2 of the Inspection**

The second day of the inspection was planned to collect samples from the WWTP, an area where a petroleum seep was identified, STP-1 sumps, and the Railroad Loading/Unloading Facility sumps. The original plan was to begin sampling at the WWTP, sampling 3-4 points.

Upon arrival and after the inspection team prepared containers for sample collection, the team was told the WWTP was shut down due to scheduled maintenance. I requested a copy of the work order showing/documenting the shutdown had been scheduled prior to our arrival for the inspection. The documentation provided showed the work had been scheduled approximately one week prior to our arrival. The work was to replace grounding buses for the electrical equipment.

This event changed our sampling schedule. Instead of the WWTP, we sampled the seep area and the Railroad Loading Rack. We split samples with Western and shipped the Railroad Loading Rack samples to the NMED laboratory as requested. The seep samples were packed and maintained on ice for shipment to the EPA lab the next day. Samples were to be analyzed for Total VOC, TCLP VOC, TCLP SVOC, and Total Metals. For the QA/QC protocol, the sample suite also includes a matrix spike, a matrix spike duplicate, trip blank, and temperature blank. See the laboratory data package in Appendix 6 for details.

NOTE: The WWTP shutdown was supposed to be completed by 13:30. Maintenance was reportedly scheduled for 3 months prior to this shutdown according to Mr. Erik Loera, Western WWTP Supervisor. The WWTP did not come back on line until after 18:00 according to Mr. Riege. We were not able to execute the sampling on the second day because we had to have the other samples to FedEx prior to 16:00 to meet shipping and holding times.

Before leaving the facility, a list of required documents was provided to Mr. Riege for him and Mr. Hains to be available on day 3 of the inspection.

### **Day 3 of the Inspection**

The third day of the inspection, Mr. Mansfield and I went to the WWTP to collect samples from the process train, while Mr. Barnes met with Mr. Riege, Mr. Hains and Mr. Crouch to conduct the interview and collect relevant documents.

#### The Interview

Mr. Barnes met with Mr. Hains and Mr. Crouch. Mr. Hains is the corporate remediation manager. Mr. Crouch is a contractor working for Mr. Hains. They were collecting documents to be provided to EPA electronically. Mr. Barnes provided a written letter to Hains listing/identifying the documents that were collected. A copy of that letter is at Appendix 7.

According to Mr. Hains, the groundwater reports submitted to the State contain the Lagoon VOC information that was requested.

Manifests and shipping documents for the previous 6 months were provided. The wastes identified on the manifests were primarily D003 reactive wastes on the WWTP filters. Filters are stored in a 40-yd<sup>3</sup> roll-off box and are disposed of in less than 90 days. The only 40-yd<sup>3</sup> roll-off box observed during the inspection was at the filter press. There were no 40-yd<sup>3</sup> roll-off boxes in the 90-day hazardous waste storage area.

The MPPE unit has problems with plugging because of the high sulfates in the crude and refining process. This causes the system upsets requiring frequent filter changes according to Mr. Hains and Mr. Crouch.

Groundwater drinking supplies are 1000 to 2500 feet Below Ground Surface (BGS). There are 4 potable water wells on the refinery site. Clays underlying the site are 30 to 100 feet thick and have permeability

ranging from  $10^{-4}$  to  $10^{-8}$  cm/sec. The city has a well at 3500 feet BGS. According to documents collected, the upper water bearing unit will produce approximately 100 gal/100ft<sup>2</sup>/day.

The MPPE and GAC units in the WWTP are constructed in parallel, not in series as initially assumed.

### The Sampling

Mr. Mansfield and I made several attempts with Mr. Raul Sanchez, a WWTP operator, to collect a waste water sample at outfall of the WWTP, prior to the discharge to STP-1. Due to hydrogen sulfide levels at 17 ppm (NIOSH REL: C 10 ppm [10-minute]), we withdrew from the sampling ports so Mr. Mansfield and Mr. Sanchez could don SCBAs to complete the sampling event. Several attempts were made to collect a sample, unfortunately the sampling ports were completely plugged and we were unable to retrieve samples. This indicates samples may not be being collected at the sampling points on a regular frequency. When I asked Mr. Sanchez where Western collects their effluent samples, he stated that the samples are taken from sample ports after the MPPE unit and ports after the GAC canisters. Mr. Mansfield and I collected samples with Western from post GAC (sample PT-1) and post MPPE (sample PT-2) sample ports. Samples were to be analyzed for Total VOC, TCLP VOC, TCLP SVOC, and Total Metals. For the QA/QC protocol, the sample suite also includes a matrix spike, a matrix spike duplicate, trip blank, and temperature blank.

The MPPE and GAC units at the WWTP are constructed in parallel, not in series as initially assumed. At the time of the sampling, the WWTP was treating at 198 gallons per minute (GPM). 150 GPM was being treated through the GAC units and 48 GPM were being treated through the MPPE unit.

Samples were shipped under a signed chain of custody to EPA's laboratory in Houston, Texas for analyses. I shipped the sealed sample coolers from the UPS Store in Gallup, New Mexico. See the laboratory data package in Appendix 6 for details.

### Closing Conference

A closing conference was held at 13:30 on 14 Aug 2014. Persons in attendance included:

- |    |                              |   |
|----|------------------------------|---|
| 1. | Ms. Ann Allen                | Western – via telephone                 |
| 2. | Mr. Victor “Cotton” McDaniel | Western – Refinery Manager              |
| 3. | Mr. Allen S. Hains           | Western – Corporate Remediation Manager |
| 4. | Mr. Scott Crouch             | Western – Contractor                    |
| 5. | Mr. Beck Larsen              | Western – Environmental Engineer        |
| 6. | Mr. Charles “Chuck” Barnes   | EPA Region 6                            |
| 7. | Mr. Paul James               | EPA Region 6                            |

The Closing Conference consisted of going through photographs that were taken across the facility during the inspection. Mr. Barnes and I discussed each photograph and the various issues represented in the picture.

Specific items identified during the closing conference included:

1. Leaking hazardous waste drum in the 90-day hazardous waste storage area
2. Hazardous waste drums in the HW storage area longer than 90 days

3. WWTP processes and tanks not labeled with HW
4. Inadequate secondary containment at HW management areas

### SECTION III – ANALYTICAL RESULTS

All EPA samples were analyzed at EPA Region 6 Laboratory in Houston, Texas. The following samples were sent:

Table 2  
List of Samples Collected

Station ID	Description	Laboratory ID	Sample Type	Date Collected
PT-1	Post-GAC Wastewater Sample	1408010-01	Liquid	8/14/14 10:50
PT-1D	Duplicate of Station PT-1	1408010-02	Liquid	8/14/14 10:50
PT-2	Post-MPPE Wastewater Sample	1408010-03	Liquid	8/14/14 11:20
SEEP	Surface soil sample of Seep Area	1408010-07	Solid	8/13/14 13:45
SEEP-1	Duplicate of Station SEEP	1408010-08	Solid	8/13/14 13:45
TB-2	Trip Blank	1408010-04	Liquid	8/14/14 0:00
TB-3	Trip Blank	1408010-05	Liquid	8/14/14 0:00
TB-1	Trip Blank	1408010-06	Liquid	8/13/14 0:00

The analytical report was transmitted to me on September 26, 2014. For the complete laboratory report, see Appendix 7. Analyses included in this report are as followed:

TCLP 1311 VOA/ZHE Prep	VOA TCLP 1311/8260	VOA 8260 Routine List
TCLP 1311 ABN/Pest Prep	ABN TCLP 1311/8270	ABN 8270 Routine List
TCLP 1311 Metals Prep	Metals TCLP ICP 1311/6010B	Metals ICP 6010B
	Solids, Dry Weight	Metals ICP-MS 6020

Totals analysis was performed initially to see if the TCLP was needed. Samples requiring TCLP are listed.

#### Waste Water Samples – Post Treatment

Sample PT-2 (Post-MPPE Wastewater Sample) had a concentration of Total Benzene at 600 µg/L. Due to the high concentration of benzene, sample PT-2 was reanalyzed with TCLP extraction methods and had a concentration of Benzene at 597 µg/L (0.597 mg/L). This sample exceeds the regulatory limit of 0.5 mg/L.

For comparison, sample PT-1 (Post-GAC wastewater sample) had a concentration of Total Benzene at 18.1 µg/L, and its duplicate sample PT-1D had a concentration of Total Benzene at 17.5 µg/L. For waste water samples, all other compounds/analytes, defined in 40 CFR 261.24, were below regulatory levels.

Surface Soil Samples of Seep Area

Sample SEEP and sample SEEP-1 (duplicate sample of sample SEEP) had no total concentrations that exceeded the EPA's industrial soil screening levels; but there were exceedances in residential soil screening levels for 2-Methylnaphthalene, Naphthalene, Aluminum, Cobalt, Iron, Manganese, and Arsenic (see Table 3). Under TCLP extraction methods, both sample, SEEP and SEEP-1, had no regulatory exceedances.

Table 3  
Surface Soil Samples Results from Seep – Only Detectable Total Concentrations Listed

EPA Method	Analyte/Compound	EPA Soil Screening Level		Sample ID	Result (mg/Kg)	Qualifier
		Residential (mg/Kg)	Industrial (mg/Kg)			
EPA 8260C	Cyclohexane	650	2700	SEEP	0.147	N
				SEEP-1	0.424	N
	ortho-Xylene	65	280	SEEP	3.19	J
				SEEP-1	4.72	
EPA8270D	<b>2-Methylnaphthalene</b>	<b>23</b>	300	SEEP	<b>23.0</b>	J
				SEEP-1	<b>23.5</b>	
	<b>Naphthalene</b>	<b>3.8</b>	17	SEEP	<b>8.27</b>	J
				SEEP-1	<b>8.59</b>	
	Pyrene	170	2300	SEEP	4.6	
				SEEP-1	5.39	
EPA6010B	<b>Aluminum</b>	<b>7700</b>	110000	SEEP	<b>8160</b>	
				SEEP-1	<b>7830</b>	
	Barium	1500	22000	SEEP	558	K
				SEEP-1	568	K
	Beryllium	16	230	SEEP-1	0.7	
	Cadmium	7	98	SEEP	0.7	
	Chromium	Chromium(III), Insoluble Salts 12000	180000	SEEP	6.3	
				SEEP-1	6.6	
	Cobalt	2.3	35	SEEP	<b>3.4</b>	
				SEEP-1	<b>3.5</b>	
	Copper	310	4700	SEEP	15.8	
				SEEP-1	7.8	
	<b>Iron</b>	<b>5500</b>	82000	SEEP	<b>15700</b>	
				SEEP-1	<b>4530</b>	
	Manganese	180	2600	SEEP	<b>443</b>	
				SEEP-1	<b>595</b>	
Zinc	2300	35000	SEEP	262	J	
			SEEP-1	52.2		
EPA6020	<b>Arsenic</b>	<b>0.67</b>	3	SEEP	<b>2.1</b>	
				SEEP-1	<b>1.5</b>	
	Lead	400	800	SEEP	25.8	
				SEEP-1	23	

Notes: All results are shown in mg/Kg.

J = The identification of the analyte is acceptable; the reported value is an estimate.

K = The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.

N = There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification.

**BOLD** = Concentration exceeds EPA's Residential Soil Screening Levels.

## SECTION IV - AREAS OF CONCERN

### Regulatory Compliance Concerns

1. The facility states that the WWTP is exempted from RCRA under the Wastewater Treatment Unit Exemption, aka "Headworks Exemption," 40 CFR § 261.3(a)(2)(iv)(A-G). If this is the case, the units within the WWTP is part of a wastewater treatment facility that is subject to regulation under either Section 402 or Section 307(b) of the Clean Water Act (CWA). Since the WWTP does not and had not discharged into surface waters (waters of the U.S.) or into a Publicly Owned Treatment Works (POTW) sewer system, it is believed that the WWTP does not receive the exemption, and therefore its units fall under RCRA regulations (Part 264/265, Subpart J). If this argument holds true, many infringements are likely at play, including the following concerns:
  - a) Inadequate secondary containment around hazardous waste tanks, 40 CFR § 265.193. It was noted during the preparation of this inspection that a release of hazardous waste water (D018, F038) from the API overflow tanks occurred on August 5, 2014, in which the release flowed approximately 0.5 miles. A C-141 Initial Report was provided to NMED as a result of this release. During my inspection, the secondary containment was still inadequate.
  - b) No secondary containment around Granular Activated Carbon (GAC) canisters, 40 CFR § 265.193 and § 265.31.
  - c) Inadequate secondary containment around filter press and roll off box, 40 CFR § 265.193 and 265.31; and
  - d) Inadequate labeling of hazardous waste tanks. While being accumulated on-site, each container and tank must be labeled or marked clearly with the words "Hazardous Waste," 40 CFR § 262.34(a)(3).
2. In the 90-day hazardous waste storage area, a drum containing iron chelate hazardous waste was leaking onto the ground. The failure to identify the leaking container, and containers that are deteriorating (e.g., cracked, rusted) or leaking must not be used. Waste stored in defective containers must be transferred to containers in good condition or handled in another way that satisfies the requirements in Part 264/265 (40 CFR § 265.171 and § 265.31).
3. Twelve (12) 55-gallon drum hazardous waste containers were identified in the 90-day hazardous waste storage area that exceeded the 90 day accumulation time as defined under 40 CFR § 262.34.
4. Inadequate aisle space in the 90-day hazardous waste storage area. Under 40 CFR § 265.35, the owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.
5. During the facility tour, I noted areas that hazardous waste has leaked or has a potential of leaking onto the ground. These areas include:
  - a) Seep Area (recent hazardous waste release);

- b) API Overflow Tanks (recent hazardous waste release);
- c) Fire Training Area Diesel Tank (inspection team noted contamination outside secondary containment);
- d) The poor condition of the Fire Training Pad (inspection team noted numerous cracks in the containment pad);
- e) The poor condition of the Additive Tank Farm's secondary containment (inspection team noted joint compound has weathered away from the secondary containment seems); and
- f) An old abandoned underground storage tank (inspection team noted UST outside the production area with it lid open and contents inside);

Under 40 CFR § 265.31, Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

#### Non-Regulatory Concerns

- 6. The 90-day hazardous waste storage area is not covered and during the monsoons, rainwater can fall, collect inside the storage area, and be discharged without knowledge or containment.
- 7. Multiple types of waste stored in the 90-Day Hazardous Waste Storage Area. While not against the regulation, it is not considered a safe/sound management practice.
- 8. The facility receives and treats sanitary sewage and storm water from an offsite facility. It is unknown what is in those waters.
- 9. Water well was unsecured (missing lock).

Note: Some of these concerns are being addressed, have already been addressed, or will be addressed, according to Mr. Riege email, dated August 22, 2014, Appendix 7.

#### **Section IV – LIST OF APPENDICES**

*This section should be a numbered list of all the appendices in the inspection report. The Photo log should be Appendix 1. If a permit requirement is attached to support an AOC, only attach the permit cover page and the specific pages needed to document the permit requirement (see example in Appendix 5). Example format:*

Appendix 1 – Photo Log – Photos taken with Mr. James' camera

Appendix 2 – Photo Log – Photos taken with Mr. Barnes' camera

Appendix 3 – WWTP Process flow diagram (revision 3)

Appendix 4 – C-141 Form – Hazardous Waste Release on 8/5/2014

Appendix 5 – SWMU / AOC Location Maps

Appendix 6 – Analytical results

Appendix 7 – Correspondences between EPA and Western concerning the Inspection

Appendix 8 – Information on the Seep Area



**Region 6 Compliance Assurance and Enforcement Division  
INSPECTION REPORT**

**Appendix 1**

**Photo Log**

**Photos taken with Mr. James' camera**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 1

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road

City: Gallup

County: McKinley County

State: New Mexico

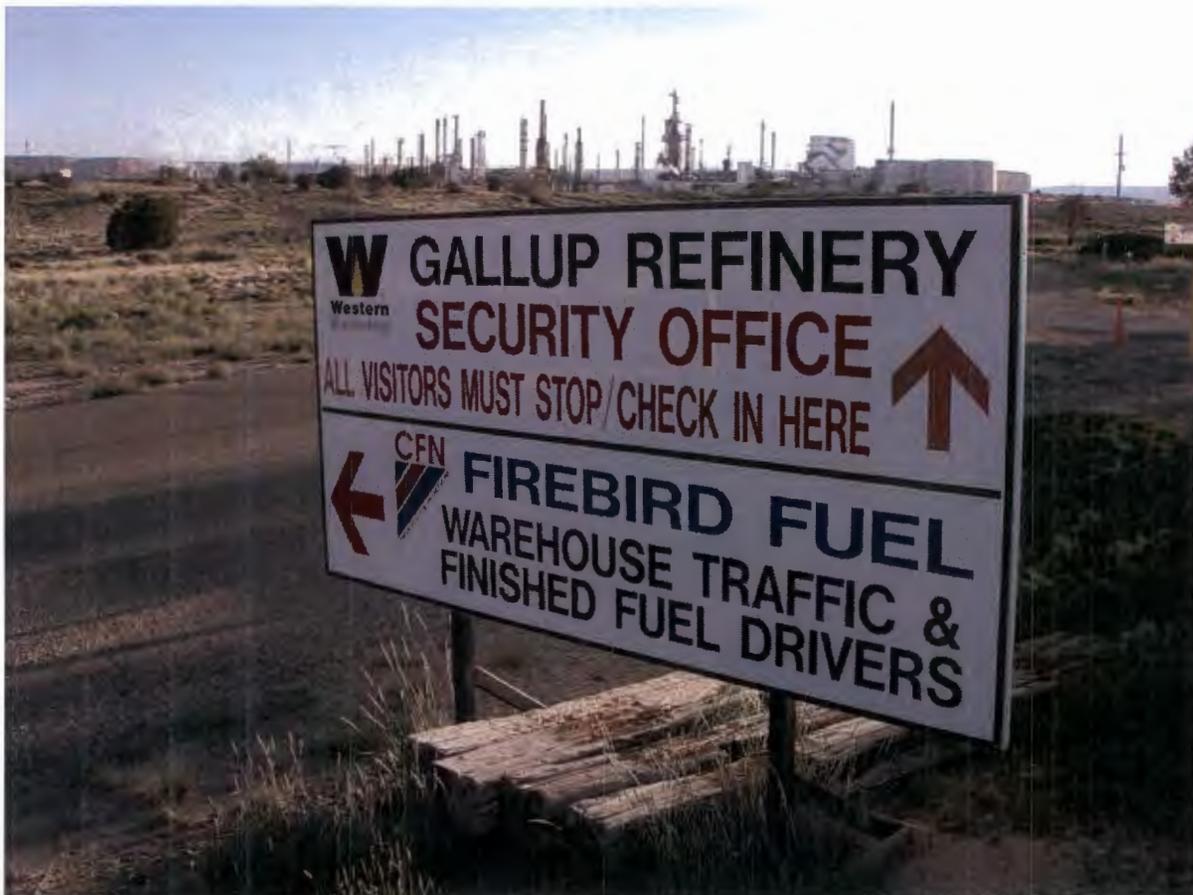


Photo File Name: P8120001

Date of Photo: 12 August 2014

Time of Photo: 0725

Photographer: Wm. Mansfield

Description: Western Refining entrance sign with facility in background.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 2

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120002

Date of Photo: 12 August 2014

Time of Photo: 1003

Photographer: Wm. Mansfield

Description: Tanks T27, T28 and T35 in background. These tanks are holding and equalization tanks for wastewater prior to treatment.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 3

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120003

Date of Photo: 12 August 2014

Time of Photo: 1003

Photographer: Wm. Mansfield

Description: WWTP - Two API/Oil-Water Separators (one with white lid in background and one without lid in foreground).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 4

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120004

Date of Photo: 12 August 2014

Time of Photo: 1013

Photographer: Wm. Mansfield

Description: WWTP Clarifier in foreground. WWTP Building in background.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 5

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120005  
Date of Photo: 12 August 2014  
Time of Photo: 1016  
Photographer: Wm. Mansfield  
Description: WWTP Float Tank.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 6

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120006

Date of Photo: 12 August 2014

Time of Photo: 1017

Photographer: Wm. Mansfield

Description: WWTP Filter-Cake Press.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 7

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120007

Date of Photo: 12 August 2014

Time of Photo: 1018

Photographer: Wm. Mansfield

Description: WWTP Filter-Cake Press' roll-off box sitting outside of secondary containment.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 8

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120008

Date of Photo: 12 August 2014

Time of Photo: 1020

Photographer: Wm. Mansfield

Description: WWTP Filter-Cake Press' roll-off box sitting outside of secondary containment.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 9

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120009

Date of Photo: 12 August 2014

Time of Photo: 1021

Photographer: Wm. Mansfield

Description: WWTP Filter-Cake Press' roll-off box sitting outside of secondary containment. Noted some spillage on the ground, under and next to the roll-off box.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 10

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120010

Date of Photo: 12 August 2014

Time of Photo: 1025

Photographer: Wm. Mansfield

Description: WWTP - Baker tanks used as grit tanks to stored wastewater from the float tank. Inadequate secondary containment. It was also noted during the inspection that the tanks had an approximate 0.4-0.5 mile release on August 5, 2014.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 11

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120011

Date of Photo: 12 August 2014

Time of Photo: 1032

Photographer: Wm. Mansfield

Description: WWTP - Baker tanks used as grit tanks to stored wastewater from the float tank. Inadequate secondary containment. It was also noted during the inspection that the tanks had an approximate 0.4-0.5 mile release on August 5, 2014.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## Photograph Log

Photo No. 12

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120012

Date of Photo: 12 August 2014

Time of Photo: 1046

Photographer: Charles Barnes

Description: WWTP - Sample port after the MPPE unit.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 13

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico

Not to be publicized

CBI Claimed Photograph

Photo File Name: P8120013  
Date of Photo: 12 August 2014  
Time of Photo: 1047  
Photographer: Charles Barnes  
Description: WWTP - Bottom of the MPPE Unit.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 14

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120014

Date of Photo: 12 August 2014

Time of Photo: 1049

Photographer: Wm. Mansfield

Description: WWTP - 10  $\mu$ m filter pots in parallel (photo out of focus).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 15

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120015

Date of Photo: 12 August 2014

Time of Photo: 1049

Photographer: Wm. Mansfield

Description: WWTP - 10  $\mu$ m filter pots in parallel (photo out of focus).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 16

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico

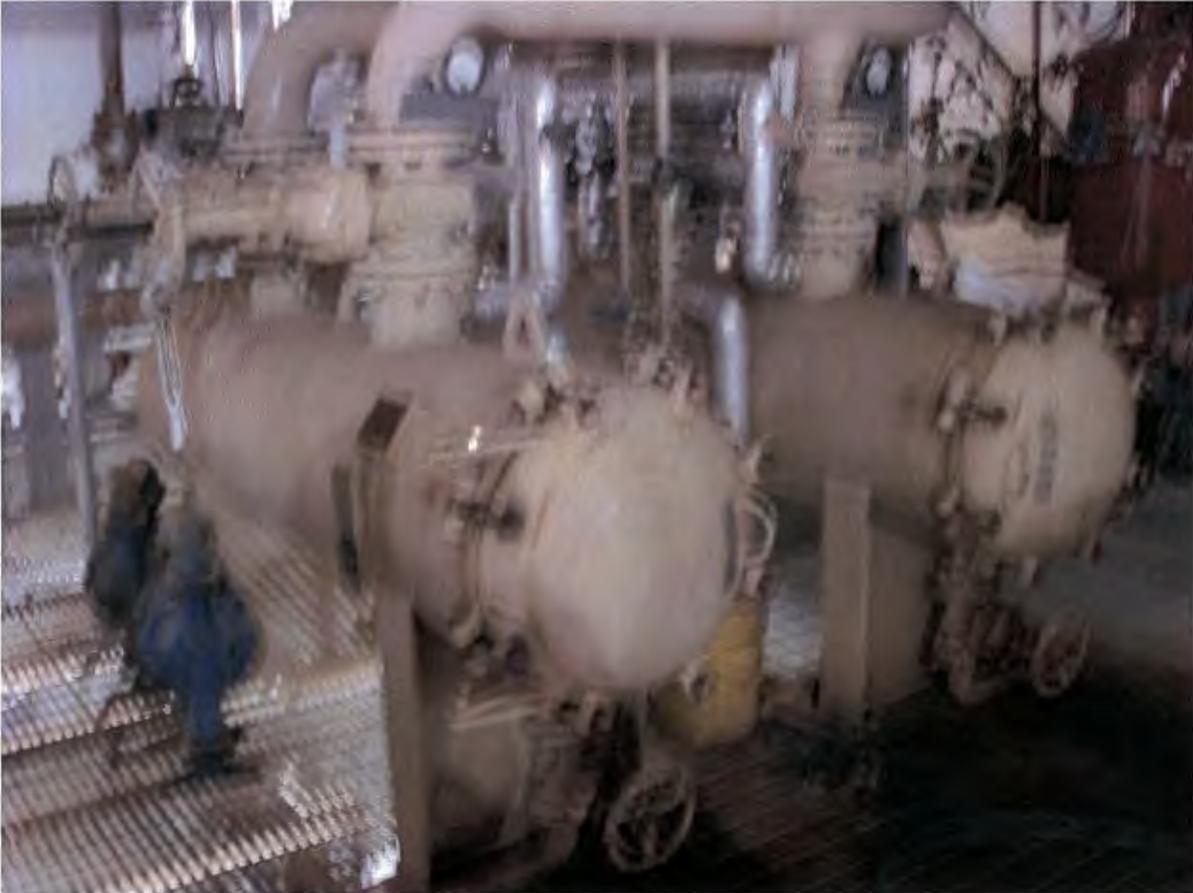


Photo File Name: P8120016

Date of Photo: 12 August 2014

Time of Photo: 1050

Photographer: Wm. Mansfield

Description: WWTP - 10  $\mu$ m filter pots in parallel (photo out of focus).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 17

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120017

Date of Photo: 12 August 2014

Time of Photo: 1052

Photographer: Wm. Mansfield

Description: WWTP - 10  $\mu$ m filter pots in parallel (photo in focus).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 18

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120018

Date of Photo: 12 August 2014

Time of Photo: 1052

Photographer: Wm. Mansfield

Description: WWTP - 250  $\mu$ m filter pots in parallel (on right).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 19

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120019

Date of Photo: 12 August 2014

Time of Photo: 1058

Photographer: Wm. Mansfield

Description: Two WWTP activated carbon canisters with no secondary containment.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 20

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120020  
Date of Photo: 12 August 2014  
Time of Photo: 1102  
Photographer: Wm. Mansfield  
Description: Sewer Treatment Pond STP-1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 21

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road

City: Gallup

County: McKinley County

State: New Mexico



Photo File Name: P8120021

Date of Photo: 12 August 2014

Time of Photo: 1115

Photographer: Wm. Mansfield

Description: 90-Day hazardous waste storage yard with leaking drum, labeled as "Hazardous Waste, Accumulation Start Date: 07-11-14, Contents: Iron Chelate". Other drums exceeded the 90 day storage limit (see Charles Barnes inspection photos).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 22

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120022

Date of Photo: 12 August 2014

Time of Photo: 1425

Photographer: Wm. Mansfield

Description: SWMU-22 - Additive Tank Farm. Noted weak seal joints on the concrete floor of the secondary containment.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 23

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120023

Date of Photo: 12 August 2014

Time of Photo: 1452

Photographer: Wm. Mansfield

Description: Groundwater seep area with noted contamination and soil staining. Six extraction points were identified.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## Photograph Log

Photo No. 24

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120024

Date of Photo: 12 August 2014

Time of Photo: 1458

Photographer: Wm. Mansfield

Description: Close-up of contamination seeping from the ground.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 25

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120025  
Date of Photo: 12 August 2014  
Time of Photo: 1511  
Photographer: Wm. Mansfield  
Description: Pond P-2 – Noted pinkish hue in the water.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 26

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120026

Date of Photo: 12 August 2014

Time of Photo: 1523

Photographer: Wm. Mansfield

Description: Opened cased steel well (unlocked/unprotected).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 27

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120027

Date of Photo: 12 August 2014

Time of Photo: 1540

Photographer: Wm. Mansfield

Description: Aeration Lagoon AL-1. Lagoon is no longer used and has not been cleaned out.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 28

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120028

Date of Photo: 12 August 2014

Time of Photo: 1555

Photographer: Wm. Mansfield

Description: New fire training area. Noted cracks and broken seals in the concrete pad.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 29

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120029

Date of Photo: 12 August 2014

Time of Photo: 1558

Photographer: Wm. Mansfield

Description: Fire Training Area - wetted tar like material on ground.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 30

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120030

Date of Photo: 12 August 2014

Time of Photo: 1602

Photographer: Wm. Mansfield

Description: Diesel tank @ Fire Training Area. Noted liquid seeping through secondary containment. Strong diesel odor noted with soils affected.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 31

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120031

Date of Photo: 12 August 2014

Time of Photo: 1619

Photographer: Wm. Mansfield

Description: Abandoned underground storage tank with opened top hatch. Discovered north of tank T554 and north of fence line.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 32

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120032  
Date of Photo: 12 August 2014  
Time of Photo: 1646  
Photographer: Wm. Mansfield  
Description: Evaporation ponds.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 33

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120033

Date of Photo: 13 August 2014

Time of Photo: 1107

Photographer: Charles Barnes

Description: Failed attempt to grab waste water sample from Pre-API sample port. No water flow due to system shut down.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 34

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120034

Date of Photo: 13 August 2014

Time of Photo: 1155

Photographer: Wm. Mansfield

Description: Railroad loading rack sump where sample was collected for NMED Hazardous Waste Bureau.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 35

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120035

Date of Photo: 13 August 2014

Time of Photo: 1342

Photographer: Charles Barnes

Description: Soil sampling of the seep west of the facility's operation.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 36

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120036

Date of Photo: 13 August 2014

Time of Photo: 1348

Photographer: Charles Barnes

Description: Soil sampling of the seep west of the facility's operation.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 37

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120037

Date of Photo: 13 August 2014

Time of Photo: 1413

Photographer: Charles Barnes

Description: Soil sampling of the seep west of the facility's operation.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 38

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico

Not to be publicized

CBI Claimed Photograph

Photo File Name: P8120038  
Date of Photo: 14 August 2014  
Time of Photo: 0840  
Photographer: Wm. Mansfield  
Description: WWTP control room PLC screen.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 39

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico

Not to be publicized

CBI Claimed Photograph

Photo File Name: P8120039  
Date of Photo: 14 August 2014  
Time of Photo: 0840  
Photographer: Wm. Mansfield  
Description: WWTP control room PLC screen.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 40

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120040

Date of Photo: 14 August 2014

Time of Photo: 1014

Photographer: Paul James

Description: Failed attempt to grab waste water sample from post-treatment sample ports. Both sample ports were completely caked/corroded.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 41

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120041

Date of Photo: 14 August 2014

Time of Photo: 1050

Photographer: Paul James

Description: Waste water sample being collected from post-carbon treatment sample port.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 42

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120042

Date of Photo: 14 August 2014

Time of Photo: 1059

Photographer: Wm. Mansfield

Description: Waste water sample was collected here from post-MPPE sample port.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 43

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: P8120043

Date of Photo: 14 August 2014

Time of Photo: 1059

Photographer: Wm. Mansfield

Description: Waste water sample was collected here from post-MPPE sample port.



**Region 6 Compliance Assurance and Enforcement Division  
INSPECTION REPORT**

**Appendix 2**

**Photo Log**

**Photos taken with Mr. Barnes' camera**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 1

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2136  
Date of Photo: 8/12/14  
Time of Photo: 1059  
Photographer: C. Barnes  
Description: Ponds. Facing west



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 2

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2137  
Date of Photo: 08/12/2014  
Time of Photo: 1059  
Photographer: Charles Barnes  
Description: STP-1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 3

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2138  
Date of Photo: 08/12/2014  
Time of Photo: 1100  
Photographer: Charles Barnes  
Description: STP-1 with aerators



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 4

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2139  
Date of Photo: 08/12/2014  
Time of Photo: 1100  
Photographer: Charles Barnes  
Description: Pond 1 with STP-1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 5

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2140  
Date of Photo: 08/12/2014  
Time of Photo: 1106  
Photographer: Charles Barnes  
Description: Pond 1 and evaporation ponds w/ aerators



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 6

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2141  
Date of Photo: 08/12/2014  
Time of Photo: 1107  
Photographer: Charles Barnes  
Description: Pond 1 and Evaporation ponds – Pink color noted.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 7

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2142  
Date of Photo: 08/12/2014  
Time of Photo: 1107  
Photographer: Charles Barnes  
Description: Evaporation Ponds



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 8

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2143  
Date of Photo: 08/12/2014  
Time of Photo: 1107  
Photographer: Charles Barnes  
Description: Ponds



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 9

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2144

Date of Photo: 08/12/2014

Time of Photo: 1107

Photographer: Charles Barnes

Description: Tanks T35, T27 and T28 with ponds



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 10

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2145  
Date of Photo: 08/12/2014  
Time of Photo: 1107  
Photographer: Charles Barnes  
Description: Tanks T35, T27 and T28 with ponds



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 11

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2146

Date of Photo: 08/12/2014

Time of Photo: 1109

Photographer: Charles Barnes

Description: STP-1 with aerators



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 12

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2147  
Date of Photo: 08/12/2014  
Time of Photo: 1122  
Photographer: Charles Barnes  
Description: HW Storage - Drums



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 13

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2148  
Date of Photo: 08/12/2014  
Time of Photo: 1123  
Photographer: Charles Barnes  
Description: HW label out of date



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 14

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2149  
Date of Photo: 08/12/2014  
Time of Photo: 1123  
Photographer: Charles Barnes  
Description: HW label out of date - 5/2/14



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 15

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road

City: Gallup

County: McKinley County

State: New Mexico



Photo File Name: 2150

Date of Photo: 08/12/2014

Time of Photo: 1124

Photographer: Charles Barnes

Description: HW Drum Leaking



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 16

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2151  
Date of Photo: 08/12/2014  
Time of Photo: 1128  
Photographer: Charles Barnes  
Description: HW label out of date



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 17

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2152  
Date of Photo: 08/12/2014  
Time of Photo: 1128  
Photographer: Charles Barnes  
Description: HW label out of date



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 18

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2153  
Date of Photo: 08/12/2014  
Time of Photo: 1507  
Photographer: Charles Barnes  
Description: Recovery well at Seep Site



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 19

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2154  
Date of Photo: 08/12/2014  
Time of Photo: 1507  
Photographer: Charles Barnes  
Description: Seep Site



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 20

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2155  
Date of Photo: 08/12/2014  
Time of Photo: 1530  
Photographer: Charles Barnes  
Description: Storm water pond near outfall



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 21

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2156  
Date of Photo: 08/12/2014  
Time of Photo: 1530  
Photographer: Charles Barnes  
Description: Storm water pond with outfall



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 22

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2157

Date of Photo: 08/12/2014

Time of Photo: 1532

Photographer: Charles Barnes

Description: Storm water pond near outfall. Noted seep from adjacent ponds at base of berm



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 23

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road

City: Gallup

County: McKinley County

State: New Mexico



Photo File Name: 2158

Date of Photo: 08/12/2014

Time of Photo: 1533

Photographer: Charles Barnes

Description: Storm water pond near outfall. Noted seep from adjacent ponds at base of berm



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
**Photograph Log**

Photo No. 24

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2159  
Date of Photo: 08/12/2014  
Time of Photo: 1536  
Photographer: Charles Barnes  
Description: Noted seep at base of berm



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 25

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2160  
Date of Photo: 08/12/2014  
Time of Photo: 1536  
Photographer: Charles Barnes  
Description: Noted seep at base of berm



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 26

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2161  
Date of Photo: 08/12/2014  
Time of Photo: 1536  
Photographer: Charles Barnes  
Description: Bad photo



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 27

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2162  
Date of Photo: 08/12/2014  
Time of Photo: 1546  
Photographer: Charles Barnes  
Description: Lagoon with oily sludges



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 28

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2163  
Date of Photo: 08/12/2014  
Time of Photo: 1546  
Photographer: Charles Barnes  
Description: Close up: Lagoon with oily sludges



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 29

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2164  
Date of Photo: 08/12/2014  
Time of Photo: 1546  
Photographer: Charles Barnes  
Description: Lagoon with oily sludges



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 30

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2165  
Date of Photo: 08/12/2014  
Time of Photo: 1643  
Photographer: Charles Barnes  
Description: ASO Treatment Unit



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 31

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2166  
Date of Photo: 08/12/2014  
Time of Photo: 1643  
Photographer: Charles Barnes  
Description: Sign on ASO Treatment Unit



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 32

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2167  
Date of Photo: 08/12/2014  
Time of Photo: 1643  
Photographer: Charles Barnes  
Description: Plate on ASO Treatment Unit



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 33

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road

City: Gallup

County: McKinley County

State: New Mexico



Photo File Name: 2168

Date of Photo: 08/12/2014

Time of Photo: 1644

Photographer: Charles Barnes

Description: CTI/ASO Tanks. Noted secondary containment not adequate.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 34

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2168  
Date of Photo: 08/12/2014  
Time of Photo: 1644  
Photographer: Charles Barnes  
Description: ASO Treatment Area



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 35

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2169  
Date of Photo: 08/12/2014  
Time of Photo: 1644  
Photographer: Charles Barnes  
Description: Land Treatment Area



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 36

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2170  
Date of Photo: 08/12/2014  
Time of Photo: 1648  
Photographer: Charles Barnes  
Description: LTU – SWMU5



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Photograph Log

Photo No. 37

Location: Western Refining - Gallup Refinery, 92 Giant Crossing Road		
City: Gallup	County: McKinley County	State: New Mexico



Photo File Name: 2171  
Date of Photo: 08/12/2014  
Time of Photo: 1652  
Photographer: Charles Barnes  
Description: Land Fill

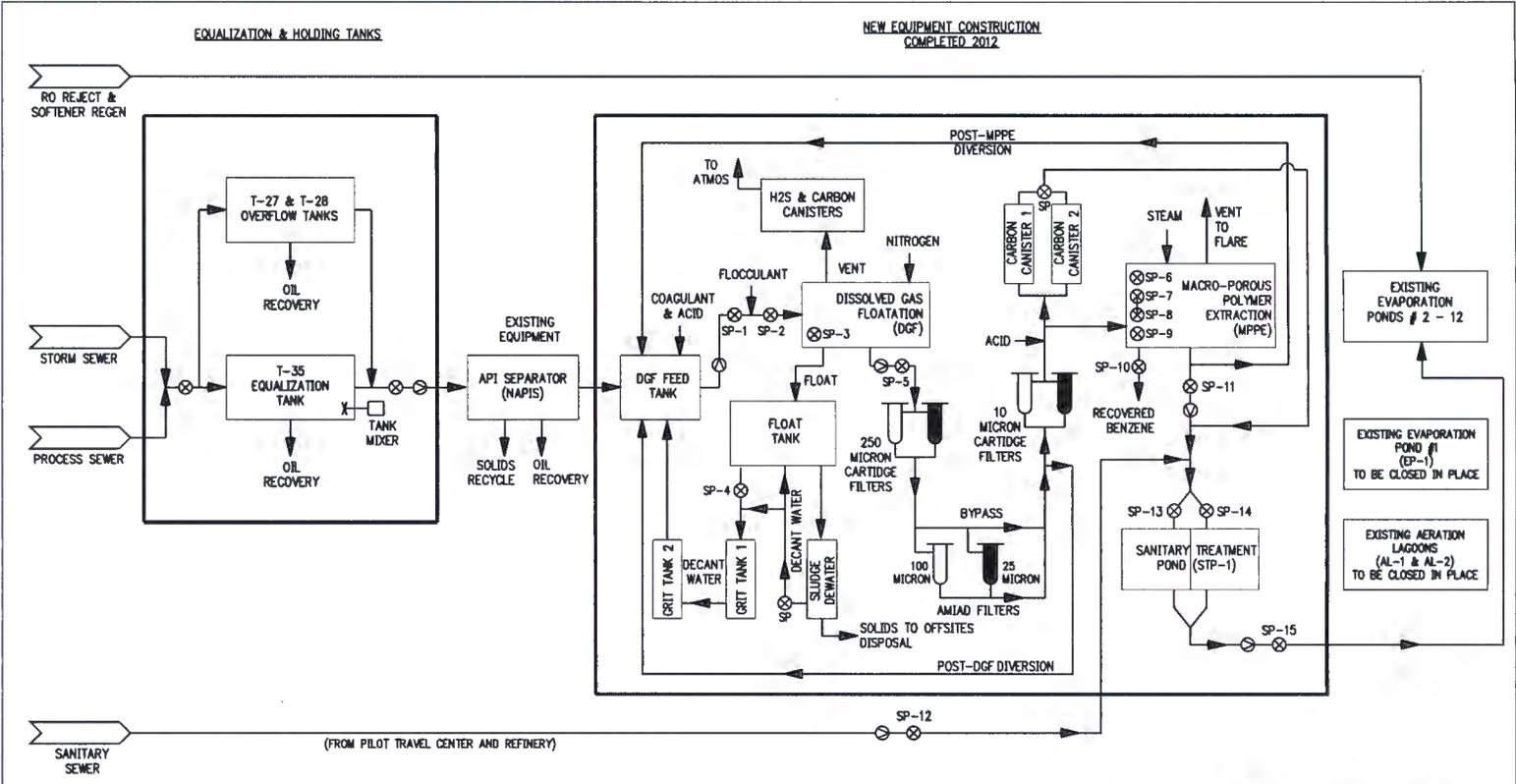
END OF PHOTOS



**Region 6 Compliance Assurance and Enforcement Division  
INSPECTION REPORT**

**Appendix 3**

**WWTP Process Flow Diagram  
(Revision 3)**



**LEGEND**

⊗ SAMPLE POINT	U PRIMARY FILTER	T STANDBY FILTER
⊙ FLOWMETER		

REV.	REVISION DESCRIPTION	DATE	DATE	DATE	DATE
3	As-built Carbon Canisters, Dewater & Grit Tanks		10/29/13		
2	Added / Upgraded Filtration Before MPPE	n/a	08/02/12		
1	For June 2011 Process Design Review - RETRACTED	n/a	07/01/11		
0	For April 2010 Process Design Review	n/a	09/23/09		

DRN. BY: FK	DATE: 09/15/11	RFE No: n/a
CHK'D. BY: DR	DATE: 09/15/11	CAD REF:
APP'D. BY: DR	DATE: 09/15/11	n/a
DRAWING NO: WWTP Blockflow Diagram.dwg		REV 3

**Western Refining**  
Gallup Refinery

**Wastewater Treatment System (WWTS)**  
**Block Flow Diagram**



Region 6 Compliance Assurance and Enforcement Division  
**INSPECTION REPORT**

Appendix 4

C-141 Form

Hazardous Waste Release on 8/5/2014

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 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: Dirty Sewer Water	Volume of Release- Oil-14 bbls	Volume Recovered: Oil- 14 bbls
Source of Release: Secondary Baker Frac Tanks at WWTP	Date and Hour of Occurrence 8/5/14 @ 1405 hrs	Date and Hour of Discovery 8/5/14 @ 1405 hrs
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD (C. Chavez) / NMED HWB (Kristen Van Horn)	
By Whom? Beck Larsen	Date and Hour: 8/6/14 C. Chavez @1335 hrs / K. Van Horn @ 1345 hrs	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 approximately 1405 hours, Oily Sewer Water from the DFG Filter press overflowed the secondary Baker Frac Tank at the WWTP. The overflow lasted for about 5 minutes. The filter press was shut down and a valve to the DGF Feed tank was open wider to allow more flow to the tank. The oily water overflowed the secondary containment of the secondary Baker frac tank, went to a storm drain, flowed down the drain to a metal culvert until it reached a stormwater conveyance (ditch), and continued to flow. Once the environmental Department was notified an onsite contractor began to berm the stormwater ditch in several locations in order to reduce the contamination area. A vacuum truck began cleanup operations.

Describe Area Affected and Cleanup Action Taken.\* A vacuum truck began cleanup operations. The extent of the contamination along the stormwater conveyance was estimated to be < 1/2 mile on western property. The liquid recovered consisted of partially standing rainwater from a previous rainfall in the ditches and the oily sewer water from the Baker tank overflow. The impacted soil around the Baker Tank and storm drain was excavated and removed for shipment offsite. The metal culvert was flushed with water to remove any residual oil. Floating oil was also removed from conveyance ditch. Samples were collected in order to determine the extent of penetration of the oil and to determine the amount of cleanup that is required. The initial cleanup has been completed pending analytical results.

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: 	<b>OIL CONSERVATION DIVISION</b>		
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 <input type="checkbox"/>
Date: 8/15/2014	Phone: (505) 722-0258		

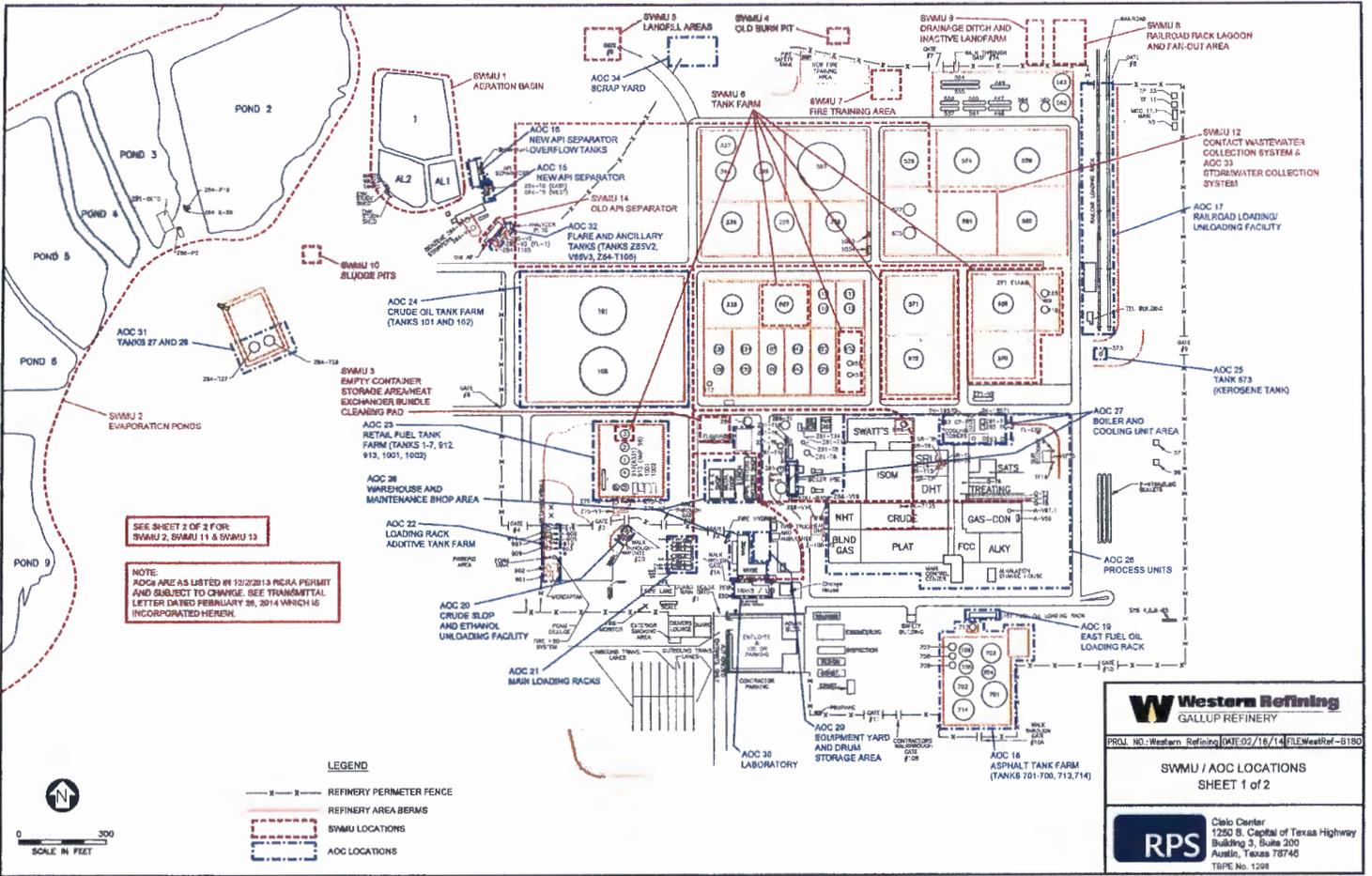
\* Attach Additional Sheets If Necessary



**Region 6 Compliance Assurance and Enforcement Division  
INSPECTION REPORT**

**Appendix 5**

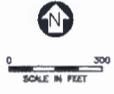
**SWMU / AOC Location Maps**



SEE SHEET 2 OF 2 FOR SWMU 2, SWMU 11 & SWMU 13

NOTE: AOCs ARE AS LISTED IN 12/2013 RCRA PERMIT AND SUBJECT TO CHANGE. SEE TRANSMITTAL LETTER DATED FEBRUARY 26, 2014 WHICH IS INCORPORATED HEREIN.

- LEGEND**
- REFINERY PERIMETER FENCE
  - REFINERY AREA BERMS
  - SWMU LOCATIONS
  - AOC LOCATIONS



**Western Refining**  
GALLUP REFINERY

PROJ. NO.: Western Refining 04E-02/16/14 FILE: WestRef-6180

SWMU / AOC LOCATIONS  
SHEET 1 of 2

**RPS** Cleo Center  
1250 S. Capital of Texas Highway  
Building 3, Suite 200  
Austin, Texas 78746  
TBP No. 1298



**Region 6 Compliance Assurance and Enforcement Division  
INSPECTION REPORT**

**Appendix 6**

**Analytical results**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**Region 6 Laboratory**  
Environmental Services Branch  
10625 Fallstone Road, Houston, TX 77099  
Phone: (281)983-2100 Fax: (281)983-2248

**Final Analytical Report**

Site Name -----Western Refining Southwest, Inc.  
Sample Collection Date(s)-- 08/13/14 - 08/14/14  
Contact----- Paul James (6EN-HC)  
Report Date-----09/25/14  
Project #----- 14RCRA131  
Work Order(s)----- 1408010

**Analyses included in this report:**

---

ABN 8270 Routine List	ABN TCLP 1311/8270
Metals ICP 6010B	Metals ICP-MS 6020
Metals TCLP ICP 1311/6010B	Solids, Dry Weight
TCLP 1311 ABN/Pest Prep	TCLP 1311 Metals Prep
TCLP 1311 VOA/ZHE Prep	VOA 8260 Routine List
VOA TCLP 1311/8260	

**Report Narrative**

**Organic analysis:**

Totals analysis was performed initially to see if the TCLP was needed. Samples requiring TCLP are listed.

**Semi-volatiles:**

Benzoic acid and Carbazole, where reported, are qualified as estimated due to chromatography problems.

**Semi-volatile solids (Batch B4H1904):**

The totals analysis for samples 1408010-07 and 1408010-08 did not meet the target reporting limits for TCLP MCLs; therefore, the TCLP was performed on the solid samples.

Several analytes fail high in the MS/MSD and two RPDs fail. Of those failures, Naphthalene and

## **Report Narrative (cont'd)**

2-Methylnaphthalene were reported in the source sample 1408010-07 and are qualified as estimated.

### **Semi-volatile TCLP solids (Batch B4H2606):**

Pyridine fails low in the BS, MS, and MSD. This analyte was not found in the associated samples.

### **Semi-volatile liquids (Batch B4H1805):**

Only the totals analysis was done for water samples. No TCLP targets were found near the MCL so the TCLP was not performed. **Note:** By error, the extraction and analysis was omitted for Pyridine. The customer was notified of this omission. Since Pyridine was not expected to be found at the site, no re-extraction was performed.

The surrogate 1,2-Dichlorobenzene-d4 fails low in sample 1408010-03 most likely due to suppression by high concentration of Phenol. The reporting limits (RLs) are raised for similar analytes to ensure non-detects are accurate. Absence or presence at the lower RL could not be verified. The suppression did not affect the ability to detect concentrations at the TCLP MCL so the TCLP was not performed.

Benzaldehyde is reported as a non-detect in sample 1408010-03 from the X5 dilution where it was found below the RL. This analyte could not be detected in the X1 analysis.

Benzyl alcohol is qualified as estimated in sample 1408010-03 due to surrogate failure and inconsistency with the X5 dilution.

Several analytes fail recovery limits in the MS/MSD and six RPDs fail (source sample 1408010-01). Of these failures, seven are significant. The reporting limits (RLs) are raised in the source sample for five analytes with low recoveries (<50%) to ensure non-detects are accurate. Absence or presence at the lower RL could not be verified. RLs are not raised for analytes with average recoveries >50%. Benzoic acid recovery and RPD fail in the MSD but this analyte is already qualified as estimated. Phenol had no recovery in the MSD. The amount spiked was inadequate to properly calculate recoveries and RPDs. No bias was placed on source results.

### **Volatile liquids (Batch B4I0203):**

Totals analysis for sample 1408010-03 shows Benzene > TCLP MCL so the TCLP was performed.

Acetone is qualified as estimated, where reported, due to failure of this analyte in the alternate source check for the initial calibration.

Two analytes fail low in the BS but should not affect the data.

A few analytes fail recovery limits in the MS/MSD and two RPDs fail (source sample 1408010-01). Acetone is listed as a non-detect in the MS/MSD. The concentration was above the calibration range and not quantifiable due to the curve fit type. The area count is comparable to the source sample at x1. This analyte is already qualified as estimated. The RL is raised in the source sample for Chloroethane due to low recovery to ensure non-detects are accurate. Absence

## **Report Narrative (cont'd)**

or presence at the lower RL could not be verified. The remaining failures do not affect the data.

### **Volatile TCLP liquid (Batch B4I0202):**

2-Butanone is qualified as estimated because this analyte failed in the associated continuing calibration check. This should not affect the data since the concentration was significantly below the TCLP MCL.

### **Volatile solids (Batch B4I0204):**

No TCLP targets were found near the MCL so the TCLP was not performed.

Cyclohexane is qualified as a tentative identification in both samples because a matching spectrum could not be obtained.

Three analytes fail low in the BS. The RLs are raised in sample 1408010-08 due to low failures. Several analytes fail recovery limits in the MS/MSD and eleven RPDs fail (source sample 1408010-07). The RLs are raised in the source sample 1408010-07 for five analytes with low recoveries (<50%) to ensure non-detects are accurate. Absence or presence at the lower RL could not be verified. RLs are not raised for analytes with average recoveries >50%. Recoveries and RPDs fail in the MS/MSD for Methylcyclohexane, o-Xylene, and m/p-Xylene. These analytes are qualified as estimated in the source sample. The remaining failures do not affect the data.

### **ICP-MS Metals:**

#### **(Batch B4H2703):**

MS1/MSD1: The antimony spike recovery is outside the acceptance limit; the source result is qualified and is an estimate.

### **ICP Metals:**

#### **(Batch B4H2702):**

BLK1: Calcium, iron, and manganese were found in the blank greater than the reporting limit; however, the sample concentrations exceed the blank concentration by a factor of ten times or more and does not affect the sample results.

MS1/MSD1: The sample concentrations for aluminum, iron, and manganese exceed the spike concentrations by a factor of four or more and the spike recoveries cannot be reliably calculated.

The spike recoveries for calcium and zinc are outside the acceptance limits; the source results are qualified and are estimates.

SRM1: Barium results for this control are greater than the acceptance limits; the results are qualified and may be biased high.

#### **(Batch B4H2704):**

**Report Narrative (cont'd)**

BLK2: Barium is in this blank above the reporting level; however, the blank concentration is low and does not affect the sample results.

MS1/MSD1: The spike recovery for selenium is outside the acceptance limit; the source result is qualified and is an estimate.

Standard procedures for quality assurance and quality control were followed in the analysis and reporting of the sample results. The results apply only to the samples tested. This final report should only be reproduced in full.

Reporting limits are adjusted for sample size and matrix interference.

Report Approvals:

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Richard McMillin  
Region 6 Laboratory Deputy Branch Chief

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Marvelyn Humphrey  
Acting Region 6 Laboratory Branch Chief



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 6 Environmental Services Branch Laboratory

10625 Fallstone Road
Houston, Texas 77099

Sample Receipt and Disposal

Site Name: Western Refining Southwest, Inc.

Project Number: 14RCRA131

Data Management Coordinator: Christy Warren

/ /

Data Management Coordinator Signature

Date

Date Transmitted: \_\_\_/\_\_\_/\_\_\_

Please have the U.S. EPA Project Manager/Officer call the Data Management Coordinator at 3-2137 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Christy Warren
Data Management Coordinator
Region 6 Laboratory
6MD-HS

Received by and Date

/ /

Comments:

The laboratory routinely disposes of samples 90 days after all analyses have been completed. If you have a need to hold these samples in custody longer than 90 days, please sign below.

Signature

Date

Please provide a reason for holding:



Environmental Protection Agency  
**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
Phone:(281)983-2100 Fax:(281)983-2248

**ANALYTICAL REPORT FOR SAMPLES**

<b>Station ID</b>	<b>Laboratory ID</b>	<b>Sample Type</b>	<b>Date Collected</b>	<b>Date Received</b>
PT-1	1408010-01	Liquid	8/14/14 10:50	08/15/14 09:55
PT-1D	1408010-02	Liquid	8/14/14 10:50	08/15/14 09:55
PT-2	1408010-03	Liquid	8/14/14 11:20	08/15/14 09:55
TB-2	1408010-04	Liquid	8/14/14 0:00	08/15/14 09:55
TB-3	1408010-05	Liquid	8/14/14 0:00	08/15/14 09:55
TB-1	1408010-06	Liquid	8/13/14 0:00	08/15/14 09:55
SEEP	1408010-07	Solid	8/13/14 13:45	08/15/14 09:55
SEEP-1	1408010-08	Solid	8/13/14 13:45	08/15/14 09:55



**Environmental Protection Agency**  
**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
 Phone:(281)983-2100 Fax:(281)983-2248

**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-01**

**Station ID: PT-1**

Batch: B4H1805  
 Sample Type: Liquid

Date Collected: 08/14/14  
 Sample Vol: 1009ml

Sample Qualifiers: A

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	59.3		79.8	42-109	08/20/14	08/20/14
Phenol-d5	52.6		70.8	46-110	"	"
2-Chlorophenol-d4	62.4		83.9	47-103	"	"
1,2-Dichlorobenzene-d4	30.3		61.2	33-100	"	"
Nitrobenzene-d5	42.4		85.5	42-126	"	"
2-Fluorobiphenyl	40.5		81.8	50-104	"	"
2,4,6-Tribromophenol	90.7		122	59-142	"	"
Terphenyl-d14	48.1		97.1	61-125	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Benzaldehyde (100-52-7)	U	RL	9.9	1	08/20/14	08/20/14
<b>Phenol (108-95-2)</b>	<b>335</b>		49.6	10	08/20/14	08/21/14
Bis(2-chloroethyl)ether (111-44-4)	U		5.0	1	08/20/14	08/20/14
2-Chlorophenol (95-57-8)	U		5.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		5.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		5.0	"	"	"
Benzyl alcohol (100-51-6)	U		5.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		5.0	"	"	"
2-Methylphenol (95-48-7)	U		5.0	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		5.0	"	"	"
Acetophenone (98-86-2)	U		5.0	"	"	"
3 &/or 4-Methylphenol (106-44-5)	U		5.0	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		5.0	"	"	"
Hexachloroethane (67-72-1)	U		5.0	"	"	"
Nitrobenzene (98-95-3)	U		5.0	"	"	"
Isophorone (78-59-1)	U		5.0	"	"	"
2-Nitrophenol (88-75-5)	U		5.0	"	"	"
2,4-Dimethylphenol (105-67-9)	U		5.0	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		5.0	"	"	"
<b>Benzoic acid (65-85-0)</b>	<b>29.3</b>	<b>J</b>	9.9	"	"	"
2,4-Dichlorophenol (120-83-2)	U		5.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		5.0	"	"	"
Naphthalene (91-20-3)	U		2.0	"	"	"



Environmental Protection Agency  
**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
 Phone:(281)983-2100 Fax:(281)983-2248

**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-01**

**Station ID: PT-1**

Batch: B4H1805

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 1009ml

Sample Qualifiers: A

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
4-Chloroaniline (106-47-8)	U	RL	9.9	1	08/20/14	08/20/14
Hexachlorobutadiene (87-68-3)	U		5.0	"	"	"
Caprolactam (105-60-2)	U		5.0	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		5.0	"	"	"
2-Methylnaphthalene (91-57-6)	U		2.0	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U	RL	19.8	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		5.0	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		5.0	"	"	"
2-Chloronaphthalene (91-58-7)	U		5.0	"	"	"
1,1'-Biphenyl (92-52-4)	U		5.0	"	"	"
2-Nitroaniline (88-74-4)	U		7.9	"	"	"
Dimethyl phthalate (131-11-3)	U		5.0	"	"	"
Acenaphthylene (208-96-8)	U		2.0	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		5.0	"	"	"
3-Nitroaniline (99-09-2)	U		7.9	"	"	"
Acenaphthene (83-32-9)	U		2.0	"	"	"
2,4-Dinitrophenol (51-28-5)	U		19.8	"	"	"
4-Nitrophenol (100-02-7)	U		12.9	"	"	"
Dibenzofuran (132-64-9)	U		5.0	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		5.0	"	"	"
Fluorene (86-73-7)	U		2.0	"	"	"
Diethyl phthalate (84-66-2)	U		5.0	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		5.0	"	"	"
4-Nitroaniline (100-01-6)	U		7.9	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		19.8	"	"	"
N-Nitrosodiphenylamine (86-30-6)	U		5.0	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		5.0	"	"	"
Hexachlorobenzene (118-74-1)	U		5.0	"	"	"
Atrazine (1912-24-9)	U	RL	14.9	"	"	"
Pentachlorophenol (87-86-5)	U		5.0	"	"	"
Phenanthrene (85-01-8)	U		2.0	"	"	"
Anthracene (120-12-7)	U		2.0	"	"	"
Carbazole (86-74-8)	U		5.0	"	"	"
Di-n-butyl phthalate (84-74-2)	U		5.0	"	"	"
Fluoranthene (206-44-0)	U		2.0	"	"	"



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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-01**

**Station ID: PT-1**

Batch: B4H1805

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 1009ml

Sample Qualifiers: A

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Pyrene (129-00-0)	U		2.0	1	08/20/14	08/20/14
Butyl benzyl phthalate (85-68-7)	U		5.0	"	"	"
Benzo (a) anthracene (56-55-3)	U		5.0	"	"	"
3,3'-Dichlorobenzidine (91-94-1)	U	RL	14.9	"	"	"
Chrysene (218-01-9)	U		5.0	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		5.0	"	"	"
Di-n-octyl phthalate (117-84-0)	U		5.0	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		5.0	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		5.0	"	"	"
Benzo (a) pyrene (50-32-8)	U		5.0	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		5.0	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		5.0	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		5.0	"	"	"

DSH



Environmental Protection Agency  
**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
 Phone:(281)983-2100 Fax:(281)983-2248

**TCLP Metals by EPA Method 1311/6010-ICP**

**Lab ID: 1408010-01**

**Station ID: PT-1**

Batch: B4H2704

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 50ml

Sample Qualifiers:

Batch Matrix: Liquid

TCLP Prepared: 8/26/14

**Targets**

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		0.40	4	08/26/14	09/11/14
<b>Barium (7440-39-3)</b>	<b>0.31</b>		0.04	"	"	"
Cadmium (7440-43-9)	U		0.02	"	"	"
Chromium (7440-47-3)	U		0.04	"	"	"
Lead (7439-92-1)	U		0.12	"	"	"
Selenium (7782-49-2)	U	UJ	0.40	"	"	"
Silver (7440-22-4)	U		0.04	"	"	"

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**Environmental Protection Agency**  
**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
 Phone:(281)983-2100 Fax:(281)983-2248

**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-01**

**Station ID: PT-1**

Batch: B410203

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
<i>1,2-Dichloroethane-d4</i>	52.4		105	86-117	08/18/14	08/18/14
<i>Toluene-d8</i>	52.6		105	85-113	"	"
<i>4-Bromofluorobenzene</i>	50.0		100	73-115	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Dichlorodifluoromethane (75-71-8)	U		5.0	1	08/18/14	08/18/14
Chloromethane (74-87-3)	U		5.0	"	"	"
Vinyl chloride (75-01-4)	U		2.0	"	"	"
Bromomethane (74-83-9)	U		5.0	"	"	"
Chloroethane (75-00-3)	U	RL	4.0	"	"	"
Trichlorofluoromethane (75-69-4)	U		2.0	"	"	"
1,1-Dichloroethene (75-35-4)	U		2.0	"	"	"
<b>Carbon disulfide (75-15-0)</b>	<b>73.6</b>		2.0	"	"	"
1,1,2-Trichloro-1,2,2-trifluoroethane (76-13-1)	U		2.0	"	"	"
<b>Acetone (67-64-1)</b>	<b>423</b>	<b>J</b>	100	10	"	08/18/14
Methylene chloride (75-09-2)	U		2.0	1	"	08/18/14
Methyl acetate (79-20-9)	U		2.0	"	"	"
trans-1,2-Dichloroethene (156-60-5)	U		2.0	"	"	"
cis-1,2-Dichloroethene (156-59-2)	U		2.0	"	"	"
Methyl tert-butyl ether (1634-04-4)	U		2.0	"	"	"
1,1-Dichloroethane (75-34-3)	U		2.0	"	"	"
<b>2-Butanone (78-93-3)</b>	<b>5.3</b>		5.0	"	"	"
Chloroform (67-66-3)	U		2.0	"	"	"
1,2-Dichloroethane (107-06-2)	U		2.0	"	"	"
1,1,1-Trichloroethane (71-55-6)	U		2.0	"	"	"
Cyclohexane (110-82-7)	U		2.0	"	"	"
Carbon tetrachloride (56-23-5)	U		2.0	"	"	"
<b>Benzene (71-43-2)</b>	<b>18.1</b>		2.0	"	"	"
Trichloroethene (79-01-6)	U		2.0	"	"	"
Methylcyclohexane (108-87-2)	U		2.0	"	"	"
1,2-Dichloropropane (78-87-5)	U		2.0	"	"	"
Bromodichloromethane (75-27-4)	U		2.0	"	"	"
cis-1,3-Dichloropropene (10061-01-5)	U		2.0	"	"	"



Environmental Protection Agency  
**Region 6 Laboratory**

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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-01**

**Station ID: PT-1**

Batch: B4I0203

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
trans-1,3-Dichloropropene (10061-02-6)	U		2.0	1	08/18/14	08/18/14
1,1,2-Trichloroethane (79-00-5)	U		2.0	"	"	"
Dibromochloromethane (124-48-1)	U		2.0	"	"	"
Bromoform (75-25-2)	U		2.0	"	"	"
4-Methyl-2-pentanone (108-10-1)	U		5.0	"	"	"
Toluene (108-88-3)	U		2.0	"	"	"
Tetrachloroethene (127-18-4)	U		2.0	"	"	"
2-Hexanone (591-78-6)	U		5.0	"	"	"
1,2-Dibromoethane (106-93-4)	U		2.0	"	"	"
Chlorobenzene (108-90-7)	U		2.0	"	"	"
Ethylbenzene (100-41-4)	U		2.0	"	"	"
meta-/para-Xylene (na)	U		4.0	"	"	"
ortho-Xylene (95-47-6)	U		2.0	"	"	"
Styrene (100-42-5)	U		2.0	"	"	"
Isopropylbenzene (98-82-8)	U		2.0	"	"	"
1,1,2,2-Tetrachloroethane (79-34-5)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,2-Dibromo-3-chloropropane (96-12-8)	U		5.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		5.0	"	"	"

This sample was received at pH 2.  
 Vinyl Chloride and Styrene may be biased low.

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**Region 6 Laboratory**

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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-02**

**Station ID: PT-1D**

Batch: B4H1805  
 Sample Type: Liquid

Date Collected: 08/14/14  
 Sample Vol: 1002ml

Sample Qualifiers: A

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	56.5		75.4	42-109	08/20/14	08/20/14
Phenol-d5	53.5		71.4	46-110	"	"
2-Chlorophenol-d4	61.5		82.1	47-103	"	"
1,2-Dichlorobenzene-d4	28.9		57.9	33-100	"	"
Nitrobenzene-d5	41.5		83.2	42-126	"	"
2-Fluorobiphenyl	42.5		85.3	50-104	"	"
2,4,6-Tribromophenol	92.5		124	59-142	"	"
Terphenyl-d14	54.3		109	61-125	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Benzaldehyde (100-52-7)	U		5.0	1	08/20/14	08/20/14
<b>Phenol (108-95-2)</b>	<b>320</b>		49.9	10	08/20/14	08/22/14
Bis(2-chloroethyl)ether (111-44-4)	U		5.0	1	08/20/14	08/20/14
2-Chlorophenol (95-57-8)	U		5.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		5.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		5.0	"	"	"
Benzyl alcohol (100-51-6)	U		5.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		5.0	"	"	"
2-Methylphenol (95-48-7)	U		5.0	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		5.0	"	"	"
Acetophenone (98-86-2)	U		5.0	"	"	"
3 &/or 4-Methylphenol (106-44-5)	U		5.0	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		5.0	"	"	"
Hexachloroethane (67-72-1)	U		5.0	"	"	"
Nitrobenzene (98-95-3)	U		5.0	"	"	"
Isophorone (78-59-1)	U		5.0	"	"	"
2-Nitrophenol (88-75-5)	U		5.0	"	"	"
2,4-Dimethylphenol (105-67-9)	U		5.0	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		5.0	"	"	"
<b>Benzoic acid (65-85-0)</b>	<b>11.4</b>	<b>J</b>	10.0	"	"	"
2,4-Dichlorophenol (120-83-2)	U		5.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		5.0	"	"	"
Naphthalene (91-20-3)	U		2.0	"	"	"



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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-02**

**Station ID: PT-1D**

Batch: B4H1805

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 1002ml

Sample Qualifiers: A

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
4-Chloroaniline (106-47-8)	U		5.0	1	08/20/14	08/20/14
Hexachlorobutadiene (87-68-3)	U		5.0	"	"	"
Caprolactam (105-60-2)	U		5.0	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		5.0	"	"	"
2-Methylnaphthalene (91-57-6)	U		2.0	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		5.0	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		5.0	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		5.0	"	"	"
2-Chloronaphthalene (91-58-7)	U		5.0	"	"	"
1,1'-Biphenyl (92-52-4)	U		5.0	"	"	"
2-Nitroaniline (88-74-4)	U		8.0	"	"	"
Dimethyl phthalate (131-11-3)	U		5.0	"	"	"
Acenaphthylene (208-96-8)	U		2.0	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		5.0	"	"	"
3-Nitroaniline (99-09-2)	U		8.0	"	"	"
Acenaphthene (83-32-9)	U		2.0	"	"	"
2,4-Dinitrophenol (51-28-5)	U		20.0	"	"	"
4-Nitrophenol (100-02-7)	U		13.0	"	"	"
Dibenzofuran (132-64-9)	U		5.0	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		5.0	"	"	"
Fluorene (86-73-7)	U		2.0	"	"	"
Diethyl phthalate (84-66-2)	U		5.0	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		5.0	"	"	"
4-Nitroaniline (100-01-6)	U		8.0	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		20.0	"	"	"
N-Nitrosodiphenylamine (86-30-6)	U		5.0	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		5.0	"	"	"
Hexachlorobenzene (118-74-1)	U		5.0	"	"	"
Atrazine (1912-24-9)	U		5.0	"	"	"
Pentachlorophenol (87-86-5)	U		5.0	"	"	"
Phenanthrene (85-01-8)	U		2.0	"	"	"
Anthracene (120-12-7)	U		2.0	"	"	"
Carbazole (86-74-8)	U		5.0	"	"	"
Di-n-butyl phthalate (84-74-2)	U		5.0	"	"	"
Fluoranthene (206-44-0)	U		2.0	"	"	"



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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-02**

**Station ID: PT-1D**

Batch: B4H1805

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 1002ml

Sample Qualifiers: A

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Pyrene (129-00-0)	U		2.0	1	08/20/14	08/20/14
Butyl benzyl phthalate (85-68-7)	U		5.0	"	"	"
Benzo (a) anthracene (56-55-3)	U		5.0	"	"	"
3,3'-Dichlorobenzidine (91-94-1)	U		5.0	"	"	"
Chrysene (218-01-9)	U		5.0	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		5.0	"	"	"
Di-n-octyl phthalate (117-84-0)	U		5.0	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		5.0	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		5.0	"	"	"
Benzo (a) pyrene (50-32-8)	U		5.0	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		5.0	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		5.0	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		5.0	"	"	"

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**TCLP Metals by EPA Method 1311/6010-ICP**

**Lab ID: 1408010-02**

**Station ID: PT-1D**

Batch: B4H2704

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 50ml

Sample Qualifiers:

Batch Matrix: Liquid

TCLP Prepared: 8/26/14

**Targets**

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		0.40	4	08/26/14	09/11/14
<b>Barium (7440-39-3)</b>	<b>0.53</b>		0.04	"	"	"
Cadmium (7440-43-9)	U		0.02	"	"	"
Chromium (7440-47-3)	U		0.04	"	"	"
Lead (7439-92-1)	U		0.12	"	"	"
Selenium (7782-49-2)	U		0.40	"	"	"
Silver (7440-22-4)	U		0.04	"	"	"

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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-02**

**Station ID: PT-1D**

Batch: B4I0203

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
<i>1,2-Dichloroethane-d4</i>	50.2		100	86-117	08/18/14	08/18/14
<i>Toluene-d8</i>	49.2		98.4	85-113	"	"
<i>4-Bromofluorobenzene</i>	47.1		94.2	73-115	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Dichlorodifluoromethane (75-71-8)	U		5.0	1	08/18/14	08/18/14
Chloromethane (74-87-3)	U		5.0	"	"	"
Vinyl chloride (75-01-4)	U		2.0	"	"	"
Bromomethane (74-83-9)	U		5.0	"	"	"
Chloroethane (75-00-3)	U		2.0	"	"	"
Trichlorofluoromethane (75-69-4)	U		2.0	"	"	"
1,1-Dichloroethene (75-35-4)	U		2.0	"	"	"
<b>Carbon disulfide (75-15-0)</b>	<b>68.2</b>		2.0	"	"	"
1,1,2-Trichloro-1,2,2-trifluoroethane (76-13-1)	U		2.0	"	"	"
<b>Acetone (67-64-1)</b>	<b>403</b>	<b>J</b>	100	10	"	08/18/14
Methylene chloride (75-09-2)	U		2.0	1	"	08/18/14
Methyl acetate (79-20-9)	U		2.0	"	"	"
trans-1,2-Dichloroethene (156-60-5)	U		2.0	"	"	"
cis-1,2-Dichloroethene (156-59-2)	U		2.0	"	"	"
Methyl tert-butyl ether (1634-04-4)	U		2.0	"	"	"
1,1-Dichloroethane (75-34-3)	U		2.0	"	"	"
<b>2-Butanone (78-93-3)</b>	<b>5.1</b>		5.0	"	"	"
Chloroform (67-66-3)	U		2.0	"	"	"
1,2-Dichloroethane (107-06-2)	U		2.0	"	"	"
1,1,1-Trichloroethane (71-55-6)	U		2.0	"	"	"
Cyclohexane (110-82-7)	U		2.0	"	"	"
Carbon tetrachloride (56-23-5)	U		2.0	"	"	"
<b>Benzene (71-43-2)</b>	<b>17.5</b>		2.0	"	"	"
Trichloroethene (79-01-6)	U		2.0	"	"	"
Methylcyclohexane (108-87-2)	U		2.0	"	"	"
1,2-Dichloropropane (78-87-5)	U		2.0	"	"	"
Bromodichloromethane (75-27-4)	U		2.0	"	"	"
cis-1,3-Dichloropropene (10061-01-5)	U		2.0	"	"	"



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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-02**

**Station ID: PT-1D**

Batch: B4I0203

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
trans-1,3-Dichloropropene (10061-02-6)	U		2.0	1	08/18/14	08/18/14
1,1,2-Trichloroethane (79-00-5)	U		2.0	"	"	"
Dibromochloromethane (124-48-1)	U		2.0	"	"	"
Bromoform (75-25-2)	U		2.0	"	"	"
4-Methyl-2-pentanone (108-10-1)	U		5.0	"	"	"
Toluene (108-88-3)	U		2.0	"	"	"
Tetrachloroethene (127-18-4)	U		2.0	"	"	"
2-Hexanone (591-78-6)	U		5.0	"	"	"
1,2-Dibromoethane (106-93-4)	U		2.0	"	"	"
Chlorobenzene (108-90-7)	U		2.0	"	"	"
Ethylbenzene (100-41-4)	U		2.0	"	"	"
meta-/para-Xylene (na)	U		4.0	"	"	"
ortho-Xylene (95-47-6)	U		2.0	"	"	"
Styrene (100-42-5)	U		2.0	"	"	"
Isopropylbenzene (98-82-8)	U		2.0	"	"	"
1,1,2,2-Tetrachloroethane (79-34-5)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,2-Dibromo-3-chloropropane (96-12-8)	U		5.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		5.0	"	"	"

This sample was received at pH 2.  
 Vinyl Chloride and Styrene may be biased low.

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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-03**

**Station ID: PT-2**

Batch: B4H1805  
 Sample Type: Liquid

Date Collected: 08/14/14  
 Sample Vol: 1000ml

Sample Qualifiers: A

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	81.9		109	42-109	08/20/14	08/21/14
Phenol-d5	54.1		72.2	46-110	08/20/14	08/20/14
2-Chlorophenol-d4	40.6		54.1	47-103	"	"
1,2-Dichlorobenzene-d4	13.4		26.7 #	33-100	"	"
Nitrobenzene-d5	24.4		48.7	42-126	"	"
2-Fluorobiphenyl	38.0		76.1	50-104	"	"
2,4,6-Tribromophenol	89.6		120	59-142	"	"
Terphenyl-d14	49.2		98.3	61-125	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Benzaldehyde (100-52-7)	U		25.0	5	08/20/14	08/21/14
<b>Phenol (108-95-2)</b>	<b>8,780</b>		500	100	08/20/14	08/21/14
Bis(2-chloroethyl)ether (111-44-4)	U		5.0	1	08/20/14	08/20/14
2-Chlorophenol (95-57-8)	U		5.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U	RL	20.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U	RL	20.0	"	"	"
<b>Benzyl alcohol (100-51-6)</b>	<b>104</b>	<b>J</b>	25.0	5	08/20/14	08/21/14
1,2-Dichlorobenzene (95-50-1)	U	RL	20.0	1	08/20/14	08/20/14
<b>2-Methylphenol (95-48-7)</b>	<b>1,520</b>		500	100	08/20/14	08/21/14
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		5.0	1	08/20/14	08/20/14
Acetophenone (98-86-2)	U		5.0	"	"	"
<b>3 &amp;/or 4-Methylphenol (106-44-5)</b>	<b>2,140</b>		500	100	08/20/14	08/21/14
N-Nitrosodi-n-propylamine (621-64-7)	U		5.0	1	08/20/14	08/20/14
Hexachloroethane (67-72-1)	U	RL	20.0	"	"	"
Nitrobenzene (98-95-3)	U		5.0	"	"	"
Isophorone (78-59-1)	U		5.0	"	"	"
2-Nitrophenol (88-75-5)	U		5.0	"	"	"
<b>2,4-Dimethylphenol (105-67-9)</b>	<b>458</b>		25.0	5	08/20/14	08/21/14
Bis(2-chloroethoxy)methane (111-91-1)	U		5.0	1	08/20/14	08/20/14
<b>Benzoic acid (65-85-0)</b>	<b>617</b>	<b>J</b>	600	100	08/20/14	08/21/14
2,4-Dichlorophenol (120-83-2)	U		5.0	1	08/20/14	08/20/14
1,2,4-Trichlorobenzene (120-82-1)	U	RL	20.0	"	"	"
Naphthalene (91-20-3)	U		2.0	"	"	"



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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-03**

**Station ID: PT-2**

Batch: B4H1805

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 1000ml

Sample Qualifiers: A

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
4-Chloroaniline (106-47-8)	U		5.0	1	08/20/14	08/20/14
Hexachlorobutadiene (87-68-3)	U	RL	20.0	"	"	"
Caprolactam (105-60-2)	U		5.0	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		5.0	"	"	"
2-Methylnaphthalene (91-57-6)	U		2.0	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		5.0	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		5.0	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		5.0	"	"	"
2-Chloronaphthalene (91-58-7)	U		5.0	"	"	"
1,1'-Biphenyl (92-52-4)	U		5.0	"	"	"
2-Nitroaniline (88-74-4)	U		8.0	"	"	"
Dimethyl phthalate (131-11-3)	U		5.0	"	"	"
Acenaphthylene (208-96-8)	U		2.0	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		5.0	"	"	"
3-Nitroaniline (99-09-2)	U		8.0	"	"	"
Acenaphthene (83-32-9)	U		2.0	"	"	"
2,4-Dinitrophenol (51-28-5)	U		20.0	"	"	"
4-Nitrophenol (100-02-7)	U		13.0	"	"	"
Dibenzofuran (132-64-9)	U		5.0	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		5.0	"	"	"
Fluorene (86-73-7)	U		2.0	"	"	"
Diethyl phthalate (84-66-2)	U		5.0	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		5.0	"	"	"
4-Nitroaniline (100-01-6)	U		8.0	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		20.0	"	"	"
N-Nitrosodiphenylamine (86-30-6)	U		5.0	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		5.0	"	"	"
Hexachlorobenzene (118-74-1)	U		5.0	"	"	"
Atrazine (1912-24-9)	U		5.0	"	"	"
Pentachlorophenol (87-86-5)	U		5.0	"	"	"
Phenanthrene (85-01-8)	U		2.0	"	"	"
Anthracene (120-12-7)	U		2.0	"	"	"
<b>Carbazole (86-74-8)</b>	<b>14.8</b>	<b>J</b>	5.0	"	"	"
Di-n-butyl phthalate (84-74-2)	U		5.0	"	"	"
Fluoranthene (206-44-0)	U		2.0	"	"	"



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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-03**

**Station ID: PT-2**

Batch: B4H1805

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 1000ml

Sample Qualifiers: A

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Pyrene (129-00-0)	U		2.0	1	08/20/14	08/20/14
Butyl benzyl phthalate (85-68-7)	U		5.0	"	"	"
Benzo (a) anthracene (56-55-3)	U		5.0	"	"	"
3,3'-Dichlorobenzidine (91-94-1)	U		5.0	"	"	"
Chrysene (218-01-9)	U		5.0	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		5.0	"	"	"
Di-n-octyl phthalate (117-84-0)	U		5.0	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		5.0	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		5.0	"	"	"
Benzo (a) pyrene (50-32-8)	U		5.0	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		5.0	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		5.0	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		5.0	"	"	"

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**Region 6 Laboratory**

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**TCLP Metals by EPA Method 1311/6010-ICP**

**Lab ID: 1408010-03**

**Station ID: PT-2**

Batch: B4H2704

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 50ml

Sample Qualifiers:

Batch Matrix: Liquid

TCLP Prepared: 8/26/14

**Targets**

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		0.40	4	08/26/14	09/11/14
<b>Barium (7440-39-3)</b>	<b>0.39</b>		0.04	"	"	"
Cadmium (7440-43-9)	U		0.02	"	"	"
Chromium (7440-47-3)	U		0.04	"	"	"
Lead (7439-92-1)	U		0.12	"	"	"
Selenium (7782-49-2)	U		0.40	"	"	"
Silver (7440-22-4)	U		0.04	"	"	"

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**TCLP Volatiles by EPA Method 1311/8260 - GC/MS**

**Lab ID: 1408010-03**

**Station ID: PT-2**

Batch: B4I0202  
 Sample Type: Liquid  
 Batch Matrix: Liquid

Date Collected: 08/14/14  
 Sample Vol: 5ml  
 TCLP Prepared: 8/25/14

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
<i>1,2-Dichloroethane-d4</i>	50.4		101	86-117	08/29/14	08/29/14
<i>Toluene-d8</i>	50.8		102	85-113	"	"
<i>4-Bromofluorobenzene</i>	48.8		97.5	73-115	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Vinyl chloride (75-01-4)	U		20.0	10	08/29/14	08/29/14
1,1-Dichloroethene (75-35-4)	U		20.0	"	"	"
<b>2-Butanone (78-93-3)</b>	<b>83.2</b>	<b>J</b>	50.0	"	"	"
Chloroform (67-66-3)	U		20.0	"	"	"
1,2-Dichloroethane (107-06-2)	U		20.0	"	"	"
Carbon tetrachloride (56-23-5)	U		20.0	"	"	"
<b>Benzene (71-43-2)</b>	<b>597</b>		20.0	"	"	"
Trichloroethene (79-01-6)	U		20.0	"	"	"
Tetrachloroethene (127-18-4)	U		20.0	"	"	"
Chlorobenzene (108-90-7)	U		20.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		20.0	"	"	"

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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-03**

**Station ID: PT-2**

Batch: B4I0203

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
<i>1,2-Dichloroethane-d4</i>	53.7		107	86-117	08/18/14	08/18/14
<i>Toluene-d8</i>	51.5		103	85-113	"	"
<i>4-Bromofluorobenzene</i>	49.7		99.4	73-115	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Dichlorodifluoromethane (75-71-8)	U		5.0	1	08/18/14	08/18/14
Chloromethane (74-87-3)	U		5.0	"	"	"
Vinyl chloride (75-01-4)	U		2.0	"	"	"
Bromomethane (74-83-9)	U		5.0	"	"	"
Chloroethane (75-00-3)	U		2.0	"	"	"
Trichlorofluoromethane (75-69-4)	U		2.0	"	"	"
1,1-Dichloroethene (75-35-4)	U		2.0	"	"	"
<b>Carbon disulfide (75-15-0)</b>	<b>231</b>		2.0	"	"	"
1,1,2-Trichloro-1,2,2-trifluoroethane (76-13-1)	U		2.0	"	"	"
<b>Acetone (67-64-1)</b>	<b>729</b>	<b>J</b>	100	10	"	08/18/14
Methylene chloride (75-09-2)	U		2.0	1	"	08/18/14
Methyl acetate (79-20-9)	U		2.0	"	"	"
trans-1,2-Dichloroethene (156-60-5)	U		2.0	"	"	"
cis-1,2-Dichloroethene (156-59-2)	U		2.0	"	"	"
Methyl tert-butyl ether (1634-04-4)	U		2.0	"	"	"
1,1-Dichloroethane (75-34-3)	U		2.0	"	"	"
<b>2-Butanone (78-93-3)</b>	<b>71.4</b>		5.0	"	"	"
Chloroform (67-66-3)	U		2.0	"	"	"
1,2-Dichloroethane (107-06-2)	U		2.0	"	"	"
1,1,1-Trichloroethane (71-55-6)	U		2.0	"	"	"
Cyclohexane (110-82-7)	U		2.0	"	"	"
Carbon tetrachloride (56-23-5)	U		2.0	"	"	"
<b>Benzene (71-43-2)</b>	<b>600</b>		20.0	10	"	08/18/14
Trichloroethene (79-01-6)	U		2.0	1	"	08/18/14
Methylcyclohexane (108-87-2)	U		2.0	"	"	"
1,2-Dichloropropane (78-87-5)	U		2.0	"	"	"
Bromodichloromethane (75-27-4)	U		2.0	"	"	"
cis-1,3-Dichloropropene (10061-01-5)	U		2.0	"	"	"



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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-03**

**Station ID: PT-2**

Batch: B410203

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
trans-1,3-Dichloropropene (10061-02-6)	U		2.0	1	08/18/14	08/18/14
1,1,2-Trichloroethane (79-00-5)	U		2.0	"	"	"
Dibromochloromethane (124-48-1)	U		2.0	"	"	"
Bromoform (75-25-2)	U		2.0	"	"	"
<b>4-Methyl-2-pentanone (108-10-1)</b>	<b>12.6</b>		5.0	"	"	"
<b>Toluene (108-88-3)</b>	<b>3.8</b>		2.0	"	"	"
Tetrachloroethene (127-18-4)	U		2.0	"	"	"
<b>2-Hexanone (591-78-6)</b>	<b>7.7</b>		5.0	"	"	"
1,2-Dibromoethane (106-93-4)	U		2.0	"	"	"
Chlorobenzene (108-90-7)	U		2.0	"	"	"
Ethylbenzene (100-41-4)	U		2.0	"	"	"
meta-/para-Xylene (na)	U		4.0	"	"	"
ortho-Xylene (95-47-6)	U		2.0	"	"	"
Styrene (100-42-5)	U		2.0	"	"	"
Isopropylbenzene (98-82-8)	U		2.0	"	"	"
1,1,2,2-Tetrachloroethane (79-34-5)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,2-Dibromo-3-chloropropane (96-12-8)	U		5.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		5.0	"	"	"

This sample was received at pH 2.  
 Vinyl Chloride and Styrene may be biased low.

ng



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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-04**

**Station ID: TB-2**

Batch: B4I0203

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
<i>1,2-Dichloroethane-d4</i>	48.4		96.8	86-117	08/18/14	08/18/14
<i>Toluene-d8</i>	47.0		94.0	85-113	"	"
<i>4-Bromofluorobenzene</i>	44.6		89.3	73-115	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Dichlorodifluoromethane (75-71-8)	U		5.0	1	08/18/14	08/18/14
Chloromethane (74-87-3)	U		5.0	"	"	"
Vinyl chloride (75-01-4)	U		2.0	"	"	"
Bromomethane (74-83-9)	U		5.0	"	"	"
Chloroethane (75-00-3)	U		2.0	"	"	"
Trichlorofluoromethane (75-69-4)	U		2.0	"	"	"
1,1-Dichloroethene (75-35-4)	U		2.0	"	"	"
Carbon disulfide (75-15-0)	U		2.0	"	"	"
1,1,2-Trichloro-1,2,2-trifluoroethane (76-13-1)	U		2.0	"	"	"
Acetone (67-64-1)	U		10.0	"	"	"
Methylene chloride (75-09-2)	U		2.0	"	"	"
Methyl acetate (79-20-9)	U		2.0	"	"	"
trans-1,2-Dichloroethene (156-60-5)	U		2.0	"	"	"
cis-1,2-Dichloroethene (156-59-2)	U		2.0	"	"	"
Methyl tert-butyl ether (1634-04-4)	U		2.0	"	"	"
1,1-Dichloroethane (75-34-3)	U		2.0	"	"	"
2-Butanone (78-93-3)	U		5.0	"	"	"
Chloroform (67-66-3)	U		2.0	"	"	"
1,2-Dichloroethane (107-06-2)	U		2.0	"	"	"
1,1,1-Trichloroethane (71-55-6)	U		2.0	"	"	"
Cyclohexane (110-82-7)	U		2.0	"	"	"
Carbon tetrachloride (56-23-5)	U		2.0	"	"	"
Benzene (71-43-2)	U		2.0	"	"	"
Trichloroethene (79-01-6)	U		2.0	"	"	"
Methylcyclohexane (108-87-2)	U		2.0	"	"	"
1,2-Dichloropropane (78-87-5)	U		2.0	"	"	"
Bromodichloromethane (75-27-4)	U		2.0	"	"	"
cis-1,3-Dichloropropene (10061-01-5)	U		2.0	"	"	"



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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-04**

**Station ID: TB-2**

Batch: B4I0203

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
trans-1,3-Dichloropropene (10061-02-6)	U		2.0	1	08/18/14	08/18/14
1,1,2-Trichloroethane (79-00-5)	U		2.0	"	"	"
Dibromochloromethane (124-48-1)	U		2.0	"	"	"
Bromoform (75-25-2)	U		2.0	"	"	"
4-Methyl-2-pentanone (108-10-1)	U		5.0	"	"	"
Toluene (108-88-3)	U		2.0	"	"	"
Tetrachloroethene (127-18-4)	U		2.0	"	"	"
2-Hexanone (591-78-6)	U		5.0	"	"	"
1,2-Dibromoethane (106-93-4)	U		2.0	"	"	"
Chlorobenzene (108-90-7)	U		2.0	"	"	"
Ethylbenzene (100-41-4)	U		2.0	"	"	"
meta-/para-Xylene (na)	U		4.0	"	"	"
ortho-Xylene (95-47-6)	U		2.0	"	"	"
Styrene (100-42-5)	U		2.0	"	"	"
Isopropylbenzene (98-82-8)	U		2.0	"	"	"
1,1,2,2-Tetrachloroethane (79-34-5)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,2-Dibromo-3-chloropropane (96-12-8)	U		5.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		5.0	"	"	"

This sample was received at pH 2.  
 Vinyl Chloride and Styrene may be biased low.

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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-05**

**Station ID: TB-3**

Batch: B4I0203

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
<i>1,2-Dichloroethane-d4</i>	52.4		105	86-117	08/18/14	08/18/14
<i>Toluene-d8</i>	50.1		100	85-113	"	"
<i>4-Bromofluorobenzene</i>	47.7		95.4	73-115	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Dichlorodifluoromethane (75-71-8)	U		5.0	1	08/18/14	08/18/14
Chloromethane (74-87-3)	U		5.0	"	"	"
Vinyl chloride (75-01-4)	U		2.0	"	"	"
Bromomethane (74-83-9)	U		5.0	"	"	"
Chloroethane (75-00-3)	U		2.0	"	"	"
Trichlorofluoromethane (75-69-4)	U		2.0	"	"	"
1,1-Dichloroethene (75-35-4)	U		2.0	"	"	"
Carbon disulfide (75-15-0)	U		2.0	"	"	"
1,1,2-Trichloro-1,2,2-trifluoroethane (76-13-1)	U		2.0	"	"	"
Acetone (67-64-1)	U		10.0	"	"	"
Methylene chloride (75-09-2)	U		2.0	"	"	"
Methyl acetate (79-20-9)	U		2.0	"	"	"
trans-1,2-Dichloroethene (156-60-5)	U		2.0	"	"	"
cis-1,2-Dichloroethene (156-59-2)	U		2.0	"	"	"
Methyl tert-butyl ether (1634-04-4)	U		2.0	"	"	"
1,1-Dichloroethane (75-34-3)	U		2.0	"	"	"
2-Butanone (78-93-3)	U		5.0	"	"	"
Chloroform (67-66-3)	U		2.0	"	"	"
1,2-Dichloroethane (107-06-2)	U		2.0	"	"	"
1,1,1-Trichloroethane (71-55-6)	U		2.0	"	"	"
Cyclohexane (110-82-7)	U		2.0	"	"	"
Carbon tetrachloride (56-23-5)	U		2.0	"	"	"
Benzene (71-43-2)	U		2.0	"	"	"
Trichloroethene (79-01-6)	U		2.0	"	"	"
Methylcyclohexane (108-87-2)	U		2.0	"	"	"
1,2-Dichloropropane (78-87-5)	U		2.0	"	"	"
Bromodichloromethane (75-27-4)	U		2.0	"	"	"
cis-1,3-Dichloropropene (10061-01-5)	U		2.0	"	"	"



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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-05**

**Station ID: TB-3**

Batch: B4I0203

Date Collected: 08/14/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
trans-1,3-Dichloropropene (10061-02-6)	U		2.0	1	08/18/14	08/18/14
1,1,2-Trichloroethane (79-00-5)	U		2.0	"	"	"
Dibromochloromethane (124-48-1)	U		2.0	"	"	"
Bromoform (75-25-2)	U		2.0	"	"	"
4-Methyl-2-pentanone (108-10-1)	U		5.0	"	"	"
Toluene (108-88-3)	U		2.0	"	"	"
Tetrachloroethene (127-18-4)	U		2.0	"	"	"
2-Hexanone (591-78-6)	U		5.0	"	"	"
1,2-Dibromoethane (106-93-4)	U		2.0	"	"	"
Chlorobenzene (108-90-7)	U		2.0	"	"	"
Ethylbenzene (100-41-4)	U		2.0	"	"	"
meta-/para-Xylene (na)	U		4.0	"	"	"
ortho-Xylene (95-47-6)	U		2.0	"	"	"
Styrene (100-42-5)	U		2.0	"	"	"
Isopropylbenzene (98-82-8)	U		2.0	"	"	"
1,1,2,2-Tetrachloroethane (79-34-5)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,2-Dibromo-3-chloropropane (96-12-8)	U		5.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		5.0	"	"	"

This sample was received at pH 2.  
 Vinyl Chloride and Styrene may be biased low.

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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-06**

**Station ID: TB-1**

Batch: B4I0203

Date Collected: 08/13/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
<i>1,2-Dichloroethane-d4</i>	55.2		110	86-117	08/18/14	08/18/14
<i>Toluene-d8</i>	52.6		105	85-113	"	"
<i>4-Bromofluorobenzene</i>	50.3		101	73-115	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Dichlorodifluoromethane (75-71-8)	U		5.0	1	08/18/14	08/18/14
Chloromethane (74-87-3)	U		5.0	"	"	"
Vinyl chloride (75-01-4)	U		2.0	"	"	"
Bromomethane (74-83-9)	U		5.0	"	"	"
Chloroethane (75-00-3)	U		2.0	"	"	"
Trichlorofluoromethane (75-69-4)	U		2.0	"	"	"
1,1-Dichloroethene (75-35-4)	U		2.0	"	"	"
Carbon disulfide (75-15-0)	U		2.0	"	"	"
1,1,2-Trichloro-1,2,2-trifluoroethane (76-13-1)	U		2.0	"	"	"
Acetone (67-64-1)	U		10.0	"	"	"
Methylene chloride (75-09-2)	U		2.0	"	"	"
Methyl acetate (79-20-9)	U		2.0	"	"	"
trans-1,2-Dichloroethene (156-60-5)	U		2.0	"	"	"
cis-1,2-Dichloroethene (156-59-2)	U		2.0	"	"	"
Methyl tert-butyl ether (1634-04-4)	U		2.0	"	"	"
1,1-Dichloroethane (75-34-3)	U		2.0	"	"	"
2-Butanone (78-93-3)	U		5.0	"	"	"
Chloroform (67-66-3)	U		2.0	"	"	"
1,2-Dichloroethane (107-06-2)	U		2.0	"	"	"
1,1,1-Trichloroethane (71-55-6)	U		2.0	"	"	"
Cyclohexane (110-82-7)	U		2.0	"	"	"
Carbon tetrachloride (56-23-5)	U		2.0	"	"	"
Benzene (71-43-2)	U		2.0	"	"	"
Trichloroethene (79-01-6)	U		2.0	"	"	"
Methylcyclohexane (108-87-2)	U		2.0	"	"	"
1,2-Dichloropropane (78-87-5)	U		2.0	"	"	"
Bromodichloromethane (75-27-4)	U		2.0	"	"	"
cis-1,3-Dichloropropene (10061-01-5)	U		2.0	"	"	"



**Environmental Protection Agency**  
**Region 6 Laboratory**

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 Phone:(281)983-2100 Fax:(281)983-2248

**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-06**

**Station ID: TB-1**

Batch: B410203

Date Collected: 08/13/14

Sample Type: Liquid

Sample Vol: 5ml

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
trans-1,3-Dichloropropene (10061-02-6)	U		2.0	1	08/18/14	08/18/14
1,1,2-Trichloroethane (79-00-5)	U		2.0	"	"	"
Dibromochloromethane (124-48-1)	U		2.0	"	"	"
Bromoform (75-25-2)	U		2.0	"	"	"
4-Methyl-2-pentanone (108-10-1)	U		5.0	"	"	"
Toluene (108-88-3)	U		2.0	"	"	"
Tetrachloroethene (127-18-4)	U		2.0	"	"	"
2-Hexanone (591-78-6)	U		5.0	"	"	"
1,2-Dibromoethane (106-93-4)	U		2.0	"	"	"
Chlorobenzene (108-90-7)	U		2.0	"	"	"
Ethylbenzene (100-41-4)	U		2.0	"	"	"
meta-/para-Xylene (na)	U		4.0	"	"	"
ortho-Xylene (95-47-6)	U		2.0	"	"	"
Styrene (100-42-5)	U		2.0	"	"	"
Isopropylbenzene (98-82-8)	U		2.0	"	"	"
1,1,2,2-Tetrachloroethane (79-34-5)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,2-Dibromo-3-chloropropane (96-12-8)	U		5.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		5.0	"	"	"

This sample was received at pH 2.  
 Vinyl Chloride and Styrene may be biased low.

ng



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10625 Fallstone Road, Houston, TX 77099  
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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-07**

**Station ID: SEEP**

Batch: B4H1904

Date Collected: 08/13/14

Sample Type: Solid

Sample Wt: 3.032g

Sample Qualifiers:

%Solids: 80.26

**Surrogates**

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	19,000		61.8	29-100	08/21/14	08/25/14
Phenol-d5	22,200		72.1	37-100	"	"
2-Chlorophenol-d4	21,600		69.9	33-100	"	"
1,2-Dichlorobenzene-d4	13,100		63.9	28-100	"	"
Nitrobenzene-d5	13,600		66.3	28-100	"	"
2-Fluorobiphenyl	18,000		87.4	37-110	"	"
2,4,6-Tribromophenol	25,300		82.1	41-137	"	"
Terphenyl-d14	17,900		87.2	46-138	"	"

**Targets**

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Benzaldehyde (100-52-7)	U		10,300	5	08/21/14	08/25/14
Phenol (108-95-2)	U		10,300	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		10,300	"	"	"
2-Chlorophenol (95-57-8)	U		10,300	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		10,300	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		10,300	"	"	"
Benzyl alcohol (100-51-6)	U		10,300	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		10,300	"	"	"
2-Methylphenol (95-48-7)	U		10,300	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		10,300	"	"	"
Acetophenone (98-86-2)	U		10,300	"	"	"
3 &/or 4-Methylphenol (106-44-5)	U		10,300	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		10,300	"	"	"
Hexachloroethane (67-72-1)	U		10,300	"	"	"
Nitrobenzene (98-95-3)	U		10,300	"	"	"
Isophorone (78-59-1)	U		10,300	"	"	"
2-Nitrophenol (88-75-5)	U		10,300	"	"	"
2,4-Dimethylphenol (105-67-9)	U		10,300	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		10,300	"	"	"
Benzoic acid (65-85-0)	U		20,500	"	"	"
2,4-Dichlorophenol (120-83-2)	U		10,300	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		10,300	"	"	"
<b>Naphthalene (91-20-3)</b>	<b>8,270</b>	<b>J</b>	<b>4,110</b>	"	"	"



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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-07**

**Station ID: SEEP**

Batch: B4H1904  
 Sample Type: Solid

Date Collected: 08/13/14  
 Sample Wt: 3.032g  
 %Solids: 80.26

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
4-Chloroaniline (106-47-8)	U		10,300	5	08/21/14	08/25/14
Hexachlorobutadiene (87-68-3)	U		10,300	"	"	"
Caprolactam (105-60-2)	U		10,300	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		10,300	"	"	"
<b>2-Methylnaphthalene (91-57-6)</b>	<b>23,000</b>	<b>J</b>	4,110	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		10,300	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		10,300	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		10,300	"	"	"
2-Chloronaphthalene (91-58-7)	U		10,300	"	"	"
1,1'-Biphenyl (92-52-4)	U		10,300	"	"	"
2-Nitroaniline (88-74-4)	U		16,400	"	"	"
Dimethyl phthalate (131-11-3)	U		10,300	"	"	"
Acenaphthylene (208-96-8)	U		4,110	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		10,300	"	"	"
3-Nitroaniline (99-09-2)	U		16,400	"	"	"
Acenaphthene (83-32-9)	U		4,110	"	"	"
2,4-Dinitrophenol (51-28-5)	U		41,100	"	"	"
4-Nitrophenol (100-02-7)	U		26,700	"	"	"
Dibenzofuran (132-64-9)	U		10,300	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		10,300	"	"	"
Fluorene (86-73-7)	U		4,110	"	"	"
Diethyl phthalate (84-66-2)	U		10,300	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		10,300	"	"	"
4-Nitroaniline (100-01-6)	U		16,400	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		41,100	"	"	"
N-Nitrosodiphenylamine (86-30-6)	U		10,300	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		10,300	"	"	"
Hexachlorobenzene (118-74-1)	U		10,300	"	"	"
Atrazine (1912-24-9)	U		10,300	"	"	"
Pentachlorophenol (87-86-5)	U		10,300	"	"	"
<b>Phenanthrene (85-01-8)</b>	<b>5,420</b>		4,110	"	"	"
Anthracene (120-12-7)	U		4,110	"	"	"
Carbazole (86-74-8)	U		10,300	"	"	"
Di-n-butyl phthalate (84-74-2)	U		10,300	"	"	"
Fluoranthene (206-44-0)	U		4,110	"	"	"



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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-07**

**Station ID: SEEP**

Batch: B4H1904

Date Collected: 08/13/14

Sample Type: Solid

Sample Wt: 3.032g

Sample Qualifiers:

%Solids: 80.26

**Targets (Continued)**

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Pyrene (129-00-0)	4,600		4,110	5	08/21/14	08/25/14
Butyl benzyl phthalate (85-68-7)	U		10,300	"	"	"
Benzo (a) anthracene (56-55-3)	U		10,300	"	"	"
3,3'-Dichlorobenzidine (91-94-1)	U		10,300	"	"	"
Chrysene (218-01-9)	U		10,300	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		10,300	"	"	"
Di-n-octyl phthalate (117-84-0)	U		10,300	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		10,300	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		10,300	"	"	"
Benzo (a) pyrene (50-32-8)	U		10,300	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		10,300	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		10,300	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		10,300	"	"	"

DSH



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**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
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**TCLP Semivolatiles by EPA Method 1311/8270 - GC/MS**

**Lab ID: 1408010-07**

**Station ID: SEEP**

Batch: B4H2606  
 Sample Type: Solid  
 Batch Matrix: Liquid

Date Collected: 08/13/14  
 Sample Vol: 100ml  
 TCLP Prepared: 8/25/14

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	508		67.7	42-109	08/27/14	08/29/14
Phenol-d5	506		67.5	46-110	"	"
2-Chlorophenol-d4	521		69.5	47-103	"	"
1,2-Dichlorobenzene-d4	244		48.9	33-100	"	"
Nitrobenzene-d5	342		68.4	42-126	"	"
2-Fluorobiphenyl	304		60.7	50-104	"	"
2,4,6-Tribromophenol	847		113	59-142	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
1,4-Dichlorobenzene (106-46-7)	U		50.0	1	08/27/14	08/29/14
2,4-Dinitrotoluene (121-14-2)	U		50.0	"	"	"
Hexachlorobenzene (118-74-1)	U		50.0	"	"	"
Hexachlorobutadiene (87-68-3)	U		50.0	"	"	"
Hexachloroethane (67-72-1)	U		50.0	"	"	"
2-Methylphenol (95-48-7)	U		50.0	"	"	"
3 &/or 4-Methylphenol (106-44-5)	U		50.0	"	"	"
Nitrobenzene (98-95-3)	U		50.0	"	"	"
Pentachlorophenol (87-86-5)	U		50.0	"	"	"
Pyridine (110-86-1)	U		50.0	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		50.0	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		50.0	"	"	"

DSH



**Environmental Protection Agency**  
**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
 Phone:(281)983-2100 Fax:(281)983-2248

**Metals by EPA Method 6010 - ICP**

**Lab ID: 1408010-07**

**Station ID: SEEP**

Batch: B4H2702

Date Collected: 08/13/14

Sample Type: Solid

Sample Wt: 0.516g

Sample Qualifiers:

%Solids: 80.26

**Targets**

Analyte (CAS Number)	Result mg/Kg dry	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Aluminum (7429-90-5)	8,160		12.1	1	08/26/14	09/11/14
Barium (7440-39-3)	558	K	1.2	"	"	"
Beryllium (7440-41-7)	0.6		0.6	"	"	"
Cadmium (7440-43-9)	0.7		0.6	"	"	"
Calcium (7440-70-2)	30,800	J	18.1	"	"	"
Chromium (7440-47-3)	6.3		1.2	"	"	"
Cobalt (7440-48-4)	3.4		2.4	"	"	"
Copper (7440-50-8)	15.8		2.4	"	"	"
Iron (7439-89-6)	15,700		3.0	"	"	"
Magnesium (7439-95-4)	2,660		18.1	"	"	"
Manganese (7439-96-5)	443		0.6	"	"	"
Nickel (7440-02-2)	6.6		2.4	"	"	"
Potassium (7440-09-7)	1,100		121	"	"	"
Silver (7440-22-4)	U		1.2	"	"	"
Sodium (7440-23-5)	1,780		60.4	"	"	"
Vanadium (7440-62-2)	14.1		2.4	"	"	"
Zinc (7440-66-6)	262	J	2.4	"	"	"

ts



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**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
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**Metals by EPA Method 6020 - ICP MS**

**Lab ID: 1408010-07**

**Station ID: SEEP**

Batch: B4H2703  
 Sample Type: Solid

Date Collected: 08/13/14  
 Sample Wt: 0.516g  
 %Solids: 80.26

Sample Qualifiers:

**Targets**

Analyte (CAS Number)	Result mg/Kg dry	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Antimony (7440-36-0)	U	J	0.6	10	08/26/14	08/29/14
<b>Arsenic (7440-38-2)</b>	<b>2.1</b>		0.6	"	"	"
<b>Lead (7439-92-1)</b>	<b>25.8</b>		0.6	"	"	"
Selenium (7782-49-2)	U		1.2	"	"	"
Thallium (7440-28-0)	U		0.6	"	"	"

KD



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**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
 Phone:(281)983-2100 Fax:(281)983-2248

**TCLP Metals by EPA Method 1311/6010-ICP**

**Lab ID: 1408010-07**

**Station ID: SEEP**

Batch: B4H2704

Date Collected: 08/13/14

Sample Type: Solid

Sample Vol: 50ml

Sample Qualifiers:

Batch Matrix: Liquid

TCLP Prepared: 8/26/14

**Targets**

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		0.40	4	08/26/14	09/11/14
<b>Barium (7440-39-3)</b>	<b>2.35</b>		0.04	"	"	"
Cadmium (7440-43-9)	U		0.02	"	"	"
Chromium (7440-47-3)	U		0.04	"	"	"
Lead (7439-92-1)	U		0.12	"	"	"
Selenium (7782-49-2)	U		0.40	"	"	"
Silver (7440-22-4)	U		0.04	"	"	"

ts



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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-07**

**Station ID: SEEP**

Batch: B4I0204

Date Collected: 08/13/14

Sample Type: Solid

Sample Wt: 5.005g

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
<i>1,2-Dichloroethane-d4</i>	52.5		105	85-117	08/19/14	08/19/14
<i>Toluene-d8</i>	48.5		97.0	87-106	"	"
<i>4-Bromofluorobenzene</i>	50.0		100	86-114	"	"

**Targets**

Analyte (CAS Number)	Result µg/Kg	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Dichlorodifluoromethane (75-71-8)	U		250	50	08/19/14	08/19/14
Chloromethane (74-87-3)	U		250	"	"	"
Vinyl chloride (75-01-4)	U		99.9	"	"	"
Bromomethane (74-83-9)	U	RL	749	"	"	"
Chloroethane (75-00-3)	U	RL	400	"	"	"
Trichlorofluoromethane (75-69-4)	U	RL	599	"	"	"
1,1-Dichloroethene (75-35-4)	U	RL	300	"	"	"
Carbon disulfide (75-15-0)	U		99.9	"	"	"
1,1,2-Trichloro-1,2,2-trifluoroethane (76-13-1)	U	RL	300	"	"	"
Acetone (67-64-1)	U		500	"	"	"
Methylene chloride (75-09-2)	U		99.9	"	"	"
Methyl acetate (79-20-9)	U		250	"	"	"
trans-1,2-Dichloroethene (156-60-5)	U		99.9	"	"	"
cis-1,2-Dichloroethene (156-59-2)	U		99.9	"	"	"
Methyl tert-butyl ether (1634-04-4)	U		99.9	"	"	"
1,1-Dichloroethane (75-34-3)	U		99.9	"	"	"
2-Butanone (78-93-3)	U		250	"	"	"
Chloroform (67-66-3)	U		99.9	"	"	"
1,2-Dichloroethane (107-06-2)	U		99.9	"	"	"
1,1,1-Trichloroethane (71-55-6)	U		99.9	"	"	"
<b>Cyclohexane (110-82-7)</b>	<b>147</b>	<b>N</b>	99.9	"	"	"
Carbon tetrachloride (56-23-5)	U		99.9	"	"	"
Benzene (71-43-2)	U		99.9	"	"	"
Trichloroethene (79-01-6)	U		99.9	"	"	"
<b>Methylcyclohexane (108-87-2)</b>	<b>408</b>	<b>J</b>	99.9	"	"	"
1,2-Dichloropropane (78-87-5)	U		99.9	"	"	"
Bromodichloromethane (75-27-4)	U		99.9	"	"	"
cis-1,3-Dichloropropene (10061-01-5)	U		99.9	"	"	"



Environmental Protection Agency  
**Region 6 Laboratory**

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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-07**

**Station ID: SEEP**

Batch: B4I0204

Date Collected: 08/13/14

Sample Type: Solid

Sample Wt: 5.005g

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/Kg	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
trans-1,3-Dichloropropene (10061-02-6)	U		99.9	50	08/19/14	08/19/14
1,1,2-Trichloroethane (79-00-5)	U		99.9	"	"	"
Dibromochloromethane (124-48-1)	U		99.9	"	"	"
Bromoform (75-25-2)	U		99.9	"	"	"
4-Methyl-2-pentanone (108-10-1)	U		250	"	"	"
Toluene (108-88-3)	U		99.9	"	"	"
Tetrachloroethene (127-18-4)	U		99.9	"	"	"
2-Hexanone (591-78-6)	U		250	"	"	"
1,2-Dibromoethane (106-93-4)	U		99.9	"	"	"
Chlorobenzene (108-90-7)	U		99.9	"	"	"
Ethylbenzene (100-41-4)	U		99.9	"	"	"
<b>meta-/para-Xylene (na)</b>	<b>1,520</b>	<b>J</b>	200	"	"	"
<b>ortho-Xylene (95-47-6)</b>	<b>3,190</b>	<b>J</b>	99.9	"	"	"
Styrene (100-42-5)	U		99.9	"	"	"
Isopropylbenzene (98-82-8)	U		99.9	"	"	"
1,1,2,2-Tetrachloroethane (79-34-5)	U		99.9	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		99.9	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		99.9	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		99.9	"	"	"
1,2-Dibromo-3-chloropropane (96-12-8)	U		250	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		250	"	"	"

ng



**Environmental Protection Agency**  
**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
 Phone:(281)983-2100 Fax:(281)983-2248

**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-08**

**Station ID: SEEP-1**

Batch: B4H1904  
 Sample Type: Solid

Date Collected: 08/13/14  
 Sample Wt: 3.072g  
 %Solids: 80.14

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	19,500		63.9	29-100	08/21/14	08/25/14
Phenol-d5	22,000		72.1	37-100	"	"
2-Chlorophenol-d4	21,800		71.7	33-100	"	"
1,2-Dichlorobenzene-d4	13,200		64.9	28-100	"	"
Nitrobenzene-d5	13,000		63.8	28-100	"	"
2-Fluorobiphenyl	18,500		90.9	37-110	"	"
2,4,6-Tribromophenol	29,800		97.9	41-137	"	"
Terphenyl-d14	19,100		94.0	46-138	"	"

**Targets**

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Benzaldehyde (100-52-7)	U		10,200	5	08/21/14	08/25/14
Phenol (108-95-2)	U		10,200	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		10,200	"	"	"
2-Chlorophenol (95-57-8)	U		10,200	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		10,200	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		10,200	"	"	"
Benzyl alcohol (100-51-6)	U		10,200	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		10,200	"	"	"
2-Methylphenol (95-48-7)	U		10,200	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		10,200	"	"	"
Acetophenone (98-86-2)	U		10,200	"	"	"
3 &/or 4-Methylphenol (106-44-5)	U		10,200	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		10,200	"	"	"
Hexachloroethane (67-72-1)	U		10,200	"	"	"
Nitrobenzene (98-95-3)	U		10,200	"	"	"
Isophorone (78-59-1)	U		10,200	"	"	"
2-Nitrophenol (88-75-5)	U		10,200	"	"	"
2,4-Dimethylphenol (105-67-9)	U		10,200	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		10,200	"	"	"
Benzoic acid (65-85-0)	U		20,300	"	"	"
2,4-Dichlorophenol (120-83-2)	U		10,200	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		10,200	"	"	"
<b>Naphthalene (91-20-3)</b>	<b>8,590</b>		<b>4,060</b>	"	"	"



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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-08**

**Station ID: SEEP-1**

Batch: B4H1904  
 Sample Type: Solid

Date Collected: 08/13/14  
 Sample Wt: 3.072g  
 %Solids: 80.14

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
4-Chloroaniline (106-47-8)	U		10,200	5	08/21/14	08/25/14
Hexachlorobutadiene (87-68-3)	U		10,200	"	"	"
Caprolactam (105-60-2)	U		10,200	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		10,200	"	"	"
<b>2-Methylnaphthalene (91-57-6)</b>	<b>23,500</b>		4,060	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		10,200	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		10,200	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		10,200	"	"	"
2-Chloronaphthalene (91-58-7)	U		10,200	"	"	"
1,1'-Biphenyl (92-52-4)	U		10,200	"	"	"
2-Nitroaniline (88-74-4)	U		16,200	"	"	"
Dimethyl phthalate (131-11-3)	U		10,200	"	"	"
Acenaphthylene (208-96-8)	U		4,060	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		10,200	"	"	"
3-Nitroaniline (99-09-2)	U		16,200	"	"	"
Acenaphthene (83-32-9)	U		4,060	"	"	"
2,4-Dinitrophenol (51-28-5)	U		40,600	"	"	"
4-Nitrophenol (100-02-7)	U		26,400	"	"	"
Dibenzofuran (132-64-9)	U		10,200	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		10,200	"	"	"
Fluorene (86-73-7)	U		4,060	"	"	"
Diethyl phthalate (84-66-2)	U		10,200	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		10,200	"	"	"
4-Nitroaniline (100-01-6)	U		16,200	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		40,600	"	"	"
N-Nitrosodiphenylamine (86-30-6)	U		10,200	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		10,200	"	"	"
Hexachlorobenzene (118-74-1)	U		10,200	"	"	"
Atrazine (1912-24-9)	U		10,200	"	"	"
Pentachlorophenol (87-86-5)	U		10,200	"	"	"
<b>Phenanthrene (85-01-8)</b>	<b>5,630</b>		4,060	"	"	"
Anthracene (120-12-7)	U		4,060	"	"	"
Carbazole (86-74-8)	U		10,200	"	"	"
Di-n-butyl phthalate (84-74-2)	U		10,200	"	"	"
Fluoranthene (206-44-0)	U		4,060	"	"	"



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**Semivolatiles by EPA Method 8270 - GC/MS**

**Lab ID: 1408010-08**

**Station ID: SEEP-1**

Batch: B4H1904  
 Sample Type: Solid

Date Collected: 08/13/14  
 Sample Wt: 3.072g  
 %Solids: 80.14

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
<b>Pyrene (129-00-0)</b>	<b>5,390</b>		4,060	5	08/21/14	08/25/14
Butyl benzyl phthalate (85-68-7)	U		10,200	"	"	"
Benzo (a) anthracene (56-55-3)	U		10,200	"	"	"
3,3'-Dichlorobenzidine (91-94-1)	U		10,200	"	"	"
Chrysene (218-01-9)	U		10,200	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		10,200	"	"	"
Di-n-octyl phthalate (117-84-0)	U		10,200	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		10,200	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		10,200	"	"	"
Benzo (a) pyrene (50-32-8)	U		10,200	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		10,200	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		10,200	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		10,200	"	"	"

DSH



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**Region 6 Laboratory**

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**TCLP Semivolatiles by EPA Method 1311/8270 - GC/MS**

**Lab ID: 1408010-08**

**Station ID: SEEP-1**

Batch: B4H2606

Date Collected: 08/13/14

Sample Type: Solid

Sample Vol: 100ml

Sample Qualifiers:

Batch Matrix: Liquid

TCLP Prepared: 8/25/14

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	407		54.2	42-109	08/27/14	08/28/14
Phenol-d5	443		59.1	46-110	"	"
2-Chlorophenol-d4	444		59.2	47-103	"	"
1,2-Dichlorobenzene-d4	207		41.5	33-100	"	"
Nitrobenzene-d5	298		59.7	42-126	"	"
2-Fluorobiphenyl	278		55.6	50-104	"	"
2,4,6-Tribromophenol	829		111	59-142	"	"

**Targets**

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
1,4-Dichlorobenzene (106-46-7)	U		50.0	1	08/27/14	08/28/14
2,4-Dinitrotoluene (121-14-2)	U		50.0	"	"	"
Hexachlorobenzene (118-74-1)	U		50.0	"	"	"
Hexachlorobutadiene (87-68-3)	U		50.0	"	"	"
Hexachloroethane (67-72-1)	U		50.0	"	"	"
2-Methylphenol (95-48-7)	U		50.0	"	"	"
3 &/or 4-Methylphenol (106-44-5)	U		50.0	"	"	"
Nitrobenzene (98-95-3)	U		50.0	"	"	"
Pentachlorophenol (87-86-5)	U		50.0	"	"	"
Pyridine (110-86-1)	U		50.0	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		50.0	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		50.0	"	"	"

DSH



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**Region 6 Laboratory**

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**Metals by EPA Method 6010 - ICP**

**Lab ID: 1408010-08**

**Station ID: SEEP-1**

Batch: B4H2702

Date Collected: 08/13/14

Sample Type: Solid

Sample Wt: 0.515g

Sample Qualifiers:

%Solids: 80.14

**Targets**

Analyte (CAS Number)	Result mg/Kg dry	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Aluminum (7429-90-5)	7,830		12.1	1	08/26/14	09/11/14
Barium (7440-39-3)	568	K	1.2	"	"	"
Beryllium (7440-41-7)	0.7		0.6	"	"	"
Cadmium (7440-43-9)	U		0.6	"	"	"
Calcium (7440-70-2)	29,900		18.2	"	"	"
Chromium (7440-47-3)	6.6		1.2	"	"	"
Cobalt (7440-48-4)	3.5		2.4	"	"	"
Copper (7440-50-8)	7.8		2.4	"	"	"
Iron (7439-89-6)	4,530		3.0	"	"	"
Magnesium (7439-95-4)	2,800		18.2	"	"	"
Manganese (7439-96-5)	595		0.6	"	"	"
Nickel (7440-02-2)	6.7		2.4	"	"	"
Potassium (7440-09-7)	1,070		121	"	"	"
Silver (7440-22-4)	U		1.2	"	"	"
Sodium (7440-23-5)	1,820		60.6	"	"	"
Vanadium (7440-62-2)	12.1		2.4	"	"	"
Zinc (7440-66-6)	52.2		2.4	"	"	"

ts



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**Region 6 Laboratory**

10625 Fallstone Road, Houston, TX 77099  
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**Metals by EPA Method 6020 - ICP MS**

**Lab ID: 1408010-08**

**Station ID: SEEP-1**

Batch: B4H2703

Date Collected: 08/13/14

Sample Type: Solid

Sample Wt: 0.515g

Sample Qualifiers:

%Solids: 80.14

**Targets**

Analyte (CAS Number)	Result mg/Kg dry	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Antimony (7440-36-0)	U		0.6	10	08/26/14	08/29/14
<b>Arsenic (7440-38-2)</b>	<b>1.5</b>		0.6	"	"	"
<b>Lead (7439-92-1)</b>	<b>23.0</b>		0.6	"	"	"
Selenium (7782-49-2)	U		1.2	"	"	"
Thallium (7440-28-0)	U		0.6	"	"	"

KD



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**Region 6 Laboratory**

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**TCLP Metals by EPA Method 1311/6010-ICP**

**Lab ID: 1408010-08**

**Station ID: SEEP-1**

Batch: B4H2704  
 Sample Type: Solid  
 Batch Matrix: Liquid

Date Collected: 08/13/14  
 Sample Vol: 50ml  
 TCLP Prepared: 8/26/14

Sample Qualifiers:

**Targets**

Analyte (CAS Number)	Result mg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Arsenic (7440-38-2)	U		0.40	4	08/26/14	09/11/14
<b>Barium (7440-39-3)</b>	<b>2.22</b>		0.04	"	"	"
Cadmium (7440-43-9)	U		0.02	"	"	"
Chromium (7440-47-3)	U		0.04	"	"	"
Lead (7439-92-1)	U		0.12	"	"	"
Selenium (7782-49-2)	U		0.40	"	"	"
Silver (7440-22-4)	U		0.04	"	"	"

ts



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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-08**

**Station ID: SEEP-1**

Batch: B4I0204

Date Collected: 08/13/14

Sample Type: Solid

Sample Wt: 4.998g

Sample Qualifiers:

**Surrogates**

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
<i>1,2-Dichloroethane-d4</i>	51.4		103	85-117	08/19/14	08/19/14
<i>Toluene-d8</i>	48.6		97.2	87-106	"	"
<i>4-Bromofluorobenzene</i>	50.3		101	86-114	"	"

**Targets**

Analyte (CAS Number)	Result µg/Kg	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Dichlorodifluoromethane (75-71-8)	U		250	50	08/19/14	08/19/14
Chloromethane (74-87-3)	U		250	"	"	"
Vinyl chloride (75-01-4)	U		100	"	"	"
Bromomethane (74-83-9)	U	RL	750	"	"	"
Chloroethane (75-00-3)	U	RL	300	"	"	"
Trichlorofluoromethane (75-69-4)	U	RL	300	"	"	"
1,1-Dichloroethene (75-35-4)	U		100	"	"	"
Carbon disulfide (75-15-0)	U		100	"	"	"
1,1,2-Trichloro-1,2,2-trifluoroethane (76-13-1)	U		100	"	"	"
Acetone (67-64-1)	U		500	"	"	"
Methylene chloride (75-09-2)	U		100	"	"	"
Methyl acetate (79-20-9)	U		250	"	"	"
trans-1,2-Dichloroethene (156-60-5)	U		100	"	"	"
cis-1,2-Dichloroethene (156-59-2)	U		100	"	"	"
Methyl tert-butyl ether (1634-04-4)	U		100	"	"	"
1,1-Dichloroethane (75-34-3)	U		100	"	"	"
2-Butanone (78-93-3)	U		250	"	"	"
Chloroform (67-66-3)	U		100	"	"	"
1,2-Dichloroethane (107-06-2)	U		100	"	"	"
1,1,1-Trichloroethane (71-55-6)	U		100	"	"	"
<b>Cyclohexane (110-82-7)</b>	<b>424</b>	<b>N</b>	100	"	"	"
Carbon tetrachloride (56-23-5)	U		100	"	"	"
Benzene (71-43-2)	U		100	"	"	"
Trichloroethene (79-01-6)	U		100	"	"	"
<b>Methylcyclohexane (108-87-2)</b>	<b>961</b>		100	"	"	"
1,2-Dichloropropane (78-87-5)	U		100	"	"	"
Bromodichloromethane (75-27-4)	U		100	"	"	"
cis-1,3-Dichloropropene (10061-01-5)	U		100	"	"	"



**Environmental Protection Agency**  
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**Volatiles by EPA Method 8260 - GC/MS**

**Lab ID: 1408010-08**

**Station ID: SEEP-1**

Batch: B4I0204

Date Collected: 08/13/14

Sample Type: Solid

Sample Wt: 4.998g

Sample Qualifiers:

**Targets (Continued)**

Analyte (CAS Number)	Result µg/Kg	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
trans-1,3-Dichloropropene (10061-02-6)	U		100	50	08/19/14	08/19/14
1,1,2-Trichloroethane (79-00-5)	U		100	"	"	"
Dibromochloromethane (124-48-1)	U		100	"	"	"
Bromoform (75-25-2)	U		100	"	"	"
4-Methyl-2-pentanone (108-10-1)	U		250	"	"	"
Toluene (108-88-3)	U		100	"	"	"
Tetrachloroethene (127-18-4)	U		100	"	"	"
2-Hexanone (591-78-6)	U		250	"	"	"
1,2-Dibromoethane (106-93-4)	U		100	"	"	"
Chlorobenzene (108-90-7)	U		100	"	"	"
Ethylbenzene (100-41-4)	U		100	"	"	"
<b>meta-/para-Xylene (na)</b>	<b>3,090</b>		200	"	"	"
<b>ortho-Xylene (95-47-6)</b>	<b>4,720</b>		100	"	"	"
Styrene (100-42-5)	U		100	"	"	"
Isopropylbenzene (98-82-8)	U		100	"	"	"
1,1,2,2-Tetrachloroethane (79-34-5)	U		100	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		100	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		100	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		100	"	"	"
1,2-Dibromo-3-chloropropane (96-12-8)	U		250	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		250	"	"	"

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**Region 6 Laboratory**

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**Percent Solids - Quality Control**

**Duplicate (B4H1903-DUP1)**

Source: 1408010-08

Prepared: 8/19/2014 Analyzed: 8/20/2014

**Targets**

ANALYTE	Result %	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	RPD RPD Limit
% Solids	80.75				80.14	0.76 20



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

**Batch: B4I0203**

**Sample Type: Liquid**

**Blank (B4I0203-BLK1)**

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC	%REC Limits
<i>1,2-Dichloroethane-d4</i>	51.0		50.0	102	86-117
<i>Toluene-d8</i>	48.9		50.0	97.8	85-113
<i>4-Bromofluorobenzene</i>	46.6		50.0	93.3	73-115

**Blank (B4I0203-BLK1)**

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Targets**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers	Limit
Dichlorodifluoromethane	U		5.0
Chloromethane	U		5.0
Vinyl chloride	U		2.0
Bromomethane	U		5.0
Chloroethane	U		2.0
Trichlorofluoromethane	U		2.0
1,1-Dichloroethene	U		2.0
Carbon disulfide	U		2.0
1,1,2-Trichloro-1,2,2-trifluoroethane	U		2.0
Acetone	U		10.0
Methylene chloride	U		2.0
Methyl acetate	U		2.0
trans-1,2-Dichloroethene	U		2.0
cis-1,2-Dichloroethene	U		2.0
Methyl tert-butyl ether	U		2.0
1,1-Dichloroethane	U		2.0
2-Butanone	U		5.0
Chloroform	U		2.0
1,2-Dichloroethane	U		2.0
1,1,1-Trichloroethane	U		2.0
Cyclohexane	U		2.0



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

Batch: B4I0203

Sample Type: Liquid

**Blank (B4I0203-BLK1)**

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers	Limit
Carbon tetrachloride	U		2.0
Benzene	U		2.0
Trichloroethene	U		2.0
Methylcyclohexane	U		2.0
1,2-Dichloropropane	U		2.0
Bromodichloromethane	U		2.0
cis-1,3-Dichloropropene	U		2.0
trans-1,3-Dichloropropene	U		2.0
1,1,2-Trichloroethane	U		2.0
Dibromochloromethane	U		2.0
Bromoform	U		2.0
4-Methyl-2-pentanone	U		5.0
Toluene	U		2.0
Tetrachloroethene	U		2.0
2-Hexanone	U		5.0
1,2-Dibromoethane	U		2.0
Chlorobenzene	U		2.0
Ethylbenzene	U		2.0
meta-/para-Xylene	U		4.0
ortho-Xylene	U		2.0
Styrene	U		2.0
Isopropylbenzene	U		2.0
1,1,2,2-Tetrachloroethane	U		2.0
1,3-Dichlorobenzene	U		2.0
1,4-Dichlorobenzene	U		2.0
1,2-Dichlorobenzene	U		2.0
1,2-Dibromo-3-chloropropane	U		5.0
1,2,4-Trichlorobenzene	U		5.0



**Environmental Protection Agency**  
**Region 6 Laboratory**

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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

**Batch: B4I0203**

**Sample Type: Liquid**

**LCS (B4I0203-BS1)**

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC	%REC Limits
<i>1,2-Dichloroethane-d4</i>	54.2		50.0	108	86-117
<i>Toluene-d8</i>	52.8		50.0	106	85-113
<i>4-Bromofluorobenzene</i>	50.7		50.0	101	73-115

**LCS (B4I0203-BS1)**

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Targets**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers	Limit	Spike Level	%REC	%REC Limits
Dichlorodifluoromethane	64.0		5.0	50.0	128	69-132
Chloromethane	50.7		5.0	50.0	101	73-130
Vinyl chloride	47.4		2.0	50.0	94.8	76-130
Bromomethane	54.8		5.0	50.0	110	75-129
Chloroethane	25.0		2.0	50.0	49.9#	75-121
Trichlorofluoromethane	46.3		2.0	50.0	92.6	79-130
1,1-Dichloroethene	51.6		2.0	50.0	103	76-127
Carbon disulfide	48.7		2.0	50.0	97.4	74-122
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0		2.0	50.0	100	79-126
Acetone	32.2		10.0	50.0	64.3	44-140
Methylene chloride	46.0		2.0	50.0	92.1	79-122
Methyl acetate	41.7		2.0	50.0	83.4	78-118
trans-1,2-Dichloroethene	47.5		2.0	50.0	95.1	78-123
cis-1,2-Dichloroethene	45.6		2.0	50.0	91.1	80-120
Methyl tert-butyl ether	43.6		2.0	50.0	87.3	78-124
1,1-Dichloroethane	48.4		2.0	50.0	96.7	80-122
2-Butanone	38.4		5.0	50.0	76.8	71-127
Chloroform	45.2		2.0	50.0	90.3	81-121
1,2-Dichloroethane	44.3		2.0	50.0	88.6	80-121
1,1,1-Trichloroethane	44.2		2.0	50.0	88.4	80-120
Cyclohexane	46.1		2.0	50.0	92.2	77-120



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

Batch: B4I0203

Sample Type: Liquid

**LCS (B4I0203-BS1)**

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	%REC Limits
Carbon tetrachloride	44.7		2.0	50.0	89.5 78-121
Benzene	44.1		2.0	50.0	88.2 81-119
Trichloroethene	43.5		2.0	50.0	87.0 80-120
Methylcyclohexane	44.8		2.0	50.0	89.6 79-122
1,2-Dichloropropane	44.1		2.0	50.0	88.1 81-121
Bromodichloromethane	44.8		2.0	50.0	89.7 80-121
cis-1,3-Dichloropropene	43.8		2.0	50.0	87.7 79-119
trans-1,3-Dichloropropene	44.5		2.0	50.0	89.0 78-119
1,1,2-Trichloroethane	41.8		2.0	50.0	83.5 80-120
Dibromochloromethane	43.7		2.0	50.0	87.4 80-118
Bromoform	41.8		2.0	50.0	83.6 79-119
4-Methyl-2-pentanone	40.0		5.0	50.0	80.0 77-121
Toluene	42.8		2.0	50.0	85.5 81-118
Tetrachloroethene	42.2		2.0	50.0	84.4 80-120
2-Hexanone	38.0		5.0	50.0	75.9# 77-122
1,2-Dibromoethane	41.1		2.0	50.0	82.1 81-118
Chlorobenzene	41.8		2.0	50.0	83.6 81-118
Ethylbenzene	42.5		2.0	50.0	84.9 80-118
meta-/para-Xylene	87.6		4.0	100	87.6 81-117
ortho-Xylene	42.5		2.0	50.0	85.0 81-118
Styrene	39.8		2.0	50.0	79.5 79-118
Isopropylbenzene	43.1		2.0	50.0	86.2 74-124
1,1,2,2-Tetrachloroethane	40.3		2.0	50.0	80.7 79-119
1,3-Dichlorobenzene	42.4		2.0	50.0	84.7 81-118
1,4-Dichlorobenzene	41.7		2.0	50.0	83.5 80-117
1,2-Dichlorobenzene	42.1		2.0	50.0	84.1 79-119
1,2-Dibromo-3-chloropropane	44.2		5.0	50.0	88.5 77-123
1,2,4-Trichlorobenzene	44.5		5.0	50.0	89.0 78-128



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

**Batch: B4I0203**

**Sample Type: Liquid**

**Matrix Spike (B4I0203-MS1)**

**Source: 1408010-01**

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>1,2-Dichloroethane-d4</i>	50.5		50.0	101	86-117
<i>Toluene-d8</i>	50.2		50.0	100	85-113
<i>4-Bromofluorobenzene</i>	48.0		50.0	95.9	73-115

**Matrix Spike (B4I0203-MS1)**

**Source: 1408010-01**

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Targets**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	Limits
Dichlorodifluoromethane	53.9		5.0	50.0		108	64-127
Chloromethane	52.6		5.0	50.0		105	68-125
Vinyl chloride	48.5		2.0	50.0		97.0	75-123
Bromomethane	48.9		5.0	50.0	0.3	97.1	46-142
Chloroethane	21.4		2.0	50.0		42.8#	60-145
Trichlorofluoromethane	38.1		2.0	50.0		76.1	73-132
1,1-Dichloroethene	47.8		2.0	50.0		95.5	72-134
Carbon disulfide	121		2.0	50.0	73.6	95.3	74-128
1,1,2-Trichloro-1,2,2-trifluoroethane	47.3		2.0	50.0		94.7	72-130
Acetone	U		10.0	50.0	423	NR #	35-142
Methylene chloride	45.4		2.0	50.0		90.8	74-127
Methyl acetate	112		2.0	50.0		224#	64-134
trans-1,2-Dichloroethene	46.8		2.0	50.0		93.7	74-130
cis-1,2-Dichloroethene	46.5		2.0	50.0		93.1	75-127
Methyl tert-butyl ether	46.8		2.0	50.0		93.6	72-130
1,1-Dichloroethane	45.8		2.0	50.0		91.6	70-133
2-Butanone	42.7		5.0	50.0	5.3	74.8	51-139
Chloroform	45.9		2.0	50.0		91.8	75-125
1,2-Dichloroethane	45.7		2.0	50.0		91.4	73-126
1,1,1-Trichloroethane	44.8		2.0	50.0		89.6	79-117
Cyclohexane	45.8		2.0	50.0		91.6	72-129



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

Batch: B4I0203

Sample Type: Liquid

**Matrix Spike (B4I0203-MS1)**

Source: 1408010-01

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers Limit	Spike Level	Source Result %REC	%REC Limits
Carbon tetrachloride	43.7	2.0	50.0		87.3 74-123
Benzene	63.1	2.0	50.0	18.1	89.9 79-122
Trichloroethene	45.2	2.0	50.0		90.4 79-126
Methylcyclohexane	46.6	2.0	50.0		93.1 76-123
1,2-Dichloropropane	45.2	2.0	50.0		90.5 77-125
Bromodichloromethane	45.9	2.0	50.0		91.8 80-115
cis-1,3-Dichloropropene	46.3	2.0	50.0		92.5 79-119
trans-1,3-Dichloropropene	46.0	2.0	50.0		92.1 77-118
1,1,2-Trichloroethane	45.1	2.0	50.0		90.2 79-122
Dibromochloromethane	46.7	2.0	50.0		93.4 78-123
Bromoform	47.3	2.0	50.0		94.6 76-127
4-Methyl-2-pentanone	48.7	5.0	50.0		97.3 84-126
Toluene	45.5	2.0	50.0	0.6	89.7 81-122
Tetrachloroethene	45.0	2.0	50.0		90.0 80-115
2-Hexanone	46.2	5.0	50.0		92.4 49-149
1,2-Dibromoethane	44.4	2.0	50.0		88.8 80-116
Chlorobenzene	44.2	2.0	50.0		88.4 82-121
Ethylbenzene	45.1	2.0	50.0		90.1 78-123
meta-/para-Xylene	92.6	4.0	100		92.6 79-123
ortho-Xylene	45.6	2.0	50.0		91.1 80-124
Styrene	45.3	2.0	50.0		90.6 82-121
Isopropylbenzene	46.2	2.0	50.0		92.4 80-117
1,1,2,2-Tetrachloroethane	45.2	2.0	50.0		90.4 77-127
1,3-Dichlorobenzene	45.0	2.0	50.0		90.0 80-114
1,4-Dichlorobenzene	45.3	2.0	50.0		90.7 79-116
1,2-Dichlorobenzene	45.3	2.0	50.0		90.6 77-118
1,2-Dibromo-3-chloropropane	48.6	5.0	50.0		97.2 76-116
1,2,4-Trichlorobenzene	47.0	5.0	50.0		93.9 70-118



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

**Batch: B4I0203**

**Sample Type: Liquid**

**Matrix Spike Dup (B4I0203-MSD1)**

**Source: 1408010-01**

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>1,2-Dichloroethane-d4</i>	50.6		50.0	101	86-117
<i>Toluene-d8</i>	50.6		50.0	101	85-113
<i>4-Bromofluorobenzene</i>	48.8		50.0	97.6	73-115

**Matrix Spike Dup (B4I0203-MSD1)**

**Source: 1408010-01**

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Targets**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
Dichlorodifluoromethane	53.1		5.0	50.0		106	64-127	1.42	21
Chloromethane	51.0		5.0	50.0		102	68-125	2.97	15
Vinyl chloride	47.5		2.0	50.0		94.9	75-123	2.19	16
Bromomethane	50.0		5.0	50.0	0.3	99.3	46-142	2.16	17
Chloroethane	20.6		2.0	50.0		41.2#	60-145	3.76	18
Trichlorofluoromethane	37.7		2.0	50.0		75.3	73-132	1.06	12
1,1-Dichloroethene	47.4		2.0	50.0		94.9	72-134	0.67	21
Carbon disulfide	128		2.0	50.0	73.6	109	74-128	5.63	16
1,1,2-Trichloro-1,2,2-trifluoroethane	47.6		2.0	50.0		95.2	72-130	0.55	19
Acetone	U		10.0	50.0	423	NR #	35-142	#	17
Methylene chloride	45.5		2.0	50.0		91.0	74-127	0.15	13
Methyl acetate	83.8		2.0	50.0		168 #	64-134	28.8 #	13
trans-1,2-Dichloroethene	47.2		2.0	50.0		94.3	74-130	0.68	14
cis-1,2-Dichloroethene	46.8		2.0	50.0		93.7	75-127	0.64	15
Methyl tert-butyl ether	46.7		2.0	50.0		93.3	72-130	0.26	12
1,1-Dichloroethane	45.8		2.0	50.0		91.5	70-133	0.13	14
2-Butanone	43.3		5.0	50.0	5.3	76.0	51-139	1.49	21
Chloroform	46.2		2.0	50.0		92.4	75-125	0.59	13
1,2-Dichloroethane	45.9		2.0	50.0		91.7	73-126	0.31	13
1,1,1-Trichloroethane	45.0		2.0	50.0		90.0	79-117	0.49	13
Cyclohexane	46.0		2.0	50.0		92.1	72-129	0.52	13



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

Batch: B4I0203

Sample Type: Liquid

**Matrix Spike Dup (B4I0203-MSD1)**

Source: 1408010-01

Prepared: 8/18/2014 Analyzed: 8/18/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Carbon tetrachloride	43.4		2.0	50.0		86.8 74-123	0.57	14
Benzene	63.2		2.0	50.0	18.1	90.2 79-122	0.22	16
Trichloroethene	45.4		2.0	50.0		90.7 79-126	0.31	14
Methylcyclohexane	47.1		2.0	50.0		94.3 76-123	1.24	20
1,2-Dichloropropane	45.0		2.0	50.0		90.0 77-125	0.53	14
Bromodichloromethane	46.3		2.0	50.0		92.6 80-115	0.80	14
cis-1,3-Dichloropropene	46.7		2.0	50.0		93.4 79-119	0.93	14
trans-1,3-Dichloropropene	46.7		2.0	50.0		93.4 77-118	1.40	15
1,1,2-Trichloroethane	45.4		2.0	50.0		90.7 79-122	0.53	14
Dibromochloromethane	47.4		2.0	50.0		94.8 78-123	1.51	14
Bromoform	48.2		2.0	50.0		96.3 76-127	1.82	14
4-Methyl-2-pentanone	48.5		5.0	50.0		97.1 84-126	0.25	15
Toluene	46.0		2.0	50.0	0.6	90.6 81-122	1.01	13
Tetrachloroethene	45.7		2.0	50.0		91.4 80-115	1.48	12
2-Hexanone	46.5		5.0	50.0		92.9 49-149	0.52	21
1,2-Dibromoethane	45.0		2.0	50.0		89.9 80-116	1.28	14
Chlorobenzene	44.9		2.0	50.0		89.7 82-121	1.50	10
Ethylbenzene	45.6		2.0	50.0		91.3 78-123	1.28	15
meta-/para-Xylene	93.4		4.0	100		93.4 79-123	0.89	19
ortho-Xylene	46.4		2.0	50.0		92.8 80-124	1.81	18
Styrene	45.9		2.0	50.0		91.8 82-121	1.32	12
Isopropylbenzene	46.7		2.0	50.0		93.5 80-117	1.18	11
1,1,2,2-Tetrachloroethane	46.0		2.0	50.0		92.0 77-127	1.73	14
1,3-Dichlorobenzene	46.0		2.0	50.0		92.0 80-114	2.22	13
1,4-Dichlorobenzene	45.9		2.0	50.0		91.8 79-116	1.23	11
1,2-Dichlorobenzene	46.1		2.0	50.0		92.2 77-118	1.73	12
1,2-Dibromo-3-chloropropane	49.3		5.0	50.0		98.6 76-116	1.35	16
1,2,4-Trichlorobenzene	47.5		5.0	50.0		95.0 70-118	1.10	21



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

**Batch: B4I0204**

**Sample Type: Solid**

**Blank (B4I0204-BLK1)**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	Limits
<i>1,2-Dichloroethane-d4</i>	53.0		50.0	106	85-117
<i>Toluene-d8</i>	49.6		50.0	99.2	87-106
<i>4-Bromofluorobenzene</i>	49.2		50.0	98.4	86-114

**Blank (B4I0204-BLK1)**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Targets**

ANALYTE	Result µg/Kg	Analyte Reporting Qualifiers	Limit
Dichlorodifluoromethane	U		250
Chloromethane	U		250
Vinyl chloride	U		100
Bromomethane	U		250
Chloroethane	U		100
Trichlorofluoromethane	U		100
1,1-Dichloroethene	U		100
Carbon disulfide	U		100
1,1,2-Trichloro-1,2,2-trifluoroethane	U		100
Acetone	U		500
Methylene chloride	U		100
Methyl acetate	U		250
trans-1,2-Dichloroethene	U		100
cis-1,2-Dichloroethene	U		100
Methyl tert-butyl ether	U		100
1,1-Dichloroethane	U		100
2-Butanone	U		250
Chloroform	U		100
1,2-Dichloroethane	U		100
1,1,1-Trichloroethane	U		100
Cyclohexane	U		100



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

Batch: B4I0204

Sample Type: Solid

**Blank (B4I0204-BLK1)**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Targets (Continued)**

ANALYTE	Result µg/Kg	Analyte Reporting Qualifiers Limit
Carbon tetrachloride	U	100
Benzene	U	100
Trichloroethene	U	100
Methylcyclohexane	U	100
1,2-Dichloropropane	U	100
Bromodichloromethane	U	100
cis-1,3-Dichloropropene	U	100
trans-1,3-Dichloropropene	U	100
1,1,2-Trichloroethane	U	100
Dibromochloromethane	U	100
Bromoform	U	100
4-Methyl-2-pentanone	U	250
Toluene	U	100
Tetrachloroethene	U	100
2-Hexanone	U	250
1,2-Dibromoethane	U	100
Chlorobenzene	U	100
Ethylbenzene	U	100
meta-/para-Xylene	U	200
ortho-Xylene	U	100
Styrene	U	100
Isopropylbenzene	U	100
1,1,2,2-Tetrachloroethane	U	100
1,3-Dichlorobenzene	U	100
1,4-Dichlorobenzene	U	100
1,2-Dichlorobenzene	U	100
1,2-Dibromo-3-chloropropane	U	250
1,2,4-Trichlorobenzene	U	250



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

**Batch: B4I0204**

**Sample Type: Solid**

**LCS (B4I0204-BS1)**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Surrogates**

<b>ANALYTE</b>	<b>Result µg/L</b>	<b>Analyte Qualifier</b>	<b>Spike Level</b>	<b>%REC %REC</b>	<b>%REC Limits</b>
<i>1,2-Dichloroethane-d4</i>	50.5		50.0	101	85-117
<i>Toluene-d8</i>	49.3		50.0	98.6	87-106
<i>4-Bromofluorobenzene</i>	49.0		50.0	98.1	86-114

**LCS (B4I0204-BS1)**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Targets**

<b>ANALYTE</b>	<b>Result µg/Kg</b>	<b>Analyte Qualifiers</b>	<b>Reporting Limit</b>	<b>Spike Level</b>	<b>%REC %REC</b>	<b>%REC Limits</b>
Dichlorodifluoromethane	3,050		250	2,500	122	44-134
Chloromethane	2,170		250	2,500	86.9	63-138
Vinyl chloride	2,050		99.9	2,500	82.1	66-138
Bromomethane	817		250	2,500	32.7#	46-108
Chloroethane	750		99.9	2,500	30.0#	51-148
Trichlorofluoromethane	447		99.9	2,500	17.9#	42-140
1,1-Dichloroethene	2,120		99.9	2,500	84.8	70-128
Carbon disulfide	2,550		99.9	2,500	102	66-122
1,1,2-Trichloro-1,2,2-trifluoroethane	2,060		99.9	2,500	82.3	70-129
Acetone	1,360		500	2,500	54.6	46-138
Methylene chloride	2,400		99.9	2,500	95.9	75-122
Methyl acetate	2,040		250	2,500	81.6	72-120
trans-1,2-Dichloroethene	2,500		99.9	2,500	100	77-123
cis-1,2-Dichloroethene	2,390		99.9	2,500	95.6	80-120
Methyl tert-butyl ether	2,240		99.9	2,500	89.7	73-122
1,1-Dichloroethane	2,510		99.9	2,500	100	77-124
2-Butanone	1,970		250	2,500	78.9	61-130
Chloroform	2,370		99.9	2,500	94.8	77-126
1,2-Dichloroethane	2,310		99.9	2,500	92.5	81-119
1,1,1-Trichloroethane	2,320		99.9	2,500	92.8	76-123
Cyclohexane	2,420		99.9	2,500	96.9	78-118



Environmental Protection Agency  
**Region 6 Laboratory**

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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

Batch: B4I0204

Sample Type: Solid

**LCS (B4I0204-BS1)**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Targets (Continued)**

ANALYTE	Result µg/Kg	Analyte Reporting Qualifiers	Limit	Spike Level	%REC Limits
Carbon tetrachloride	2,310	99.9	2,500	92.5	77-123
Benzene	2,330	99.9	2,500	93.2	79-123
Trichloroethene	2,310	99.9	2,500	92.3	79-127
Methylcyclohexane	2,370	99.9	2,500	94.8	77-123
1,2-Dichloropropane	2,310	99.9	2,500	92.7	79-126
Bromodichloromethane	2,300	99.9	2,500	92.1	77-126
cis-1,3-Dichloropropene	2,270	99.9	2,500	90.8	75-127
trans-1,3-Dichloropropene	2,270	99.9	2,500	91.0	72-129
1,1,2-Trichloroethane	2,200	99.9	2,500	88.0	82-123
Dibromochloromethane	2,270	99.9	2,500	90.9	75-125
Bromoform	2,130	99.9	2,500	85.2	71-129
4-Methyl-2-pentanone	1,990	250	2,500	79.8	70-127
Toluene	2,230	99.9	2,500	89.3	78-125
Tetrachloroethene	2,260	99.9	2,500	90.3	76-128
2-Hexanone	1,850	250	2,500	74.0	68-133
1,2-Dibromoethane	2,130	99.9	2,500	85.3	76-123
Chlorobenzene	2,200	99.9	2,500	88.0	81-123
Ethylbenzene	2,220	99.9	2,500	88.9	76-128
meta-/para-Xylene	4,610	200	5,000	92.2	79-127
ortho-Xylene	2,240	99.9	2,500	89.8	76-130
Styrene	2,110	99.9	2,500	84.3	77-127
Isopropylbenzene	2,260	99.9	2,500	90.5	71-125
1,1,2,2-Tetrachloroethane	2,030	99.9	2,500	81.1	77-125
1,3-Dichlorobenzene	2,300	99.9	2,500	91.9	80-128
1,4-Dichlorobenzene	2,250	99.9	2,500	90.1	79-127
1,2-Dichlorobenzene	2,280	99.9	2,500	91.2	81-128
1,2-Dibromo-3-chloropropane	2,130	250	2,500	85.5	71-126
1,2,4-Trichlorobenzene	2,310	250	2,500	92.6	76-131



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

**Batch: B4I0204**

**Sample Type: Solid**

**Matrix Spike (B4I0204-MS1)**

**Source: 1408010-07**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>1,2-Dichloroethane-d4</i>	48.1		50.0	96.3	85-117
<i>Toluene-d8</i>	47.7		50.0	95.4	87-106
<i>4-Bromofluorobenzene</i>	48.1		50.0	96.1	86-114

**Matrix Spike (B4I0204-MS1)**

**Source: 1408010-07**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Targets**

ANALYTE	Result µg/Kg	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits
Dichlorodifluoromethane	1,790		250	2,500		71.5	50-150
Chloromethane	1,790		250	2,500	28.5	70.6	50-150
Vinyl chloride	1,590		99.8	2,500		63.8#	70-130
Bromomethane	745		250	2,500	142	24.2#	50-150
Chloroethane	604		99.8	2,500		24.2#	70-130
Trichlorofluoromethane	388		99.8	2,500		15.6#	70-130
1,1-Dichloroethene	526		99.8	2,500		21.1#	57-127
Carbon disulfide	1,300		99.8	2,500	8.5	51.9#	70-130
1,1,2-Trichloro-1,2,2-trifluoroethane	504		99.8	2,500		20.2#	70-130
Acetone	1,140		499	2,500		45.7#	50-150
Methylene chloride	2,390		99.8	2,500	11.5	95.2	70-130
Methyl acetate	2,500		250	2,500		100	70-130
trans-1,2-Dichloroethene	2,660		99.8	2,500		107	70-130
cis-1,2-Dichloroethene	2,950		99.8	2,500		118	70-130
Methyl tert-butyl ether	2,750		99.8	2,500		110	70-130
1,1-Dichloroethane	2,950		99.8	2,500		118	70-130
2-Butanone	2,820		250	2,500		113	50-150
Chloroform	2,950		99.8	2,500		118	70-130
1,2-Dichloroethane	2,850		99.8	2,500		114	70-130
1,1,1-Trichloroethane	2,700		99.8	2,500		108	70-130
Cyclohexane	2,510		99.8	2,500	147	94.8	70-130



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

Batch: B4I0204

Sample Type: Solid

**Matrix Spike (B4I0204-MS1)**

Source: 1408010-07

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Targets (Continued)**

ANALYTE	Result µg/Kg	Analyte Reporting Qualifiers	Limit	Spike Level	Source Result	%REC %REC	Limit
Carbon tetrachloride	2,560		99.8	2,500		103	70-130
Benzene	2,780		99.8	2,500		111	72-128
Trichloroethene	2,720		99.8	2,500		109	76-128
Methylcyclohexane	2,730		99.8	2,500	408	92.9	70-130
1,2-Dichloropropane	2,810		99.8	2,500		112	70-130
Bromodichloromethane	2,870		99.8	2,500		115	70-130
cis-1,3-Dichloropropene	2,830		99.8	2,500		114	70-130
trans-1,3-Dichloropropene	2,850		99.8	2,500		114	70-130
1,1,2-Trichloroethane	2,750		99.8	2,500		110	70-130
Dibromochloromethane	2,790		99.8	2,500		112	70-130
Bromoform	2,600		99.8	2,500		104	70-130
4-Methyl-2-pentanone	3,150		250	2,500		126	70-130
Toluene	2,620		99.8	2,500	30.5	104	75-127
Tetrachloroethene	2,430		99.8	2,500		97.2	70-130
2-Hexanone	3,250		250	2,500		130	70-130
1,2-Dibromoethane	2,680		99.8	2,500		107	70-130
Chlorobenzene	2,660		99.8	2,500		107	78-127
Ethylbenzene	2,570		99.8	2,500	16.5	102	70-130
meta-/para-Xylene	5,230		200	4,990	1,520	74.3	70-130
ortho-Xylene	3,360		99.8	2,500	3,190	6.82#	70-130
Styrene	2,540		99.8	2,500		102	70-130
Isopropylbenzene	2,570		99.8	2,500	13.0	102	70-130
1,1,1,2-Tetrachloroethane	2,620		99.8	2,500		105	70-130
1,3-Dichlorobenzene	2,570		99.8	2,500		103	70-130
1,4-Dichlorobenzene	2,560		99.8	2,500		102	70-130
1,2-Dichlorobenzene	2,510		99.8	2,500		101	70-130
1,2-Dibromo-3-chloropropane	3,270		250	2,500		131	50-150
1,2,4-Trichlorobenzene	1,560		250	2,500		62.3#	70-130



**Environmental Protection Agency**  
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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

**Batch: B4I0204**

**Sample Type: Solid**

**Matrix Spike Dup (B4I0204-MSD1)**

**Source: 1408010-07**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>1,2-Dichloroethane-d4</i>	50.9		50.0	102	85-117
<i>Toluene-d8</i>	49.7		50.0	99.3	87-106
<i>4-Bromofluorobenzene</i>	54.7		50.0	109	86-114

**Matrix Spike Dup (B4I0204-MSD1)**

**Source: 1408010-07**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Targets**

ANALYTE	Result µg/Kg	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
Dichlorodifluoromethane	1,870		250	2,500		75.0	50-150	4.82	30
Chloromethane	1,830		250	2,500	28.5	72.1	50-150	2.06	30
Vinyl chloride	1,800		99.9	2,500		72.0	70-130	12.3	30
Bromomethane	1,120		250	2,500	142	39.3#	50-150	40.5 #	30
Chloroethane	647		99.9	2,500		25.9#	70-130	6.89	30
Trichlorofluoromethane	421		99.9	2,500		16.9#	70-130	8.12	30
1,1-Dichloroethene	1,480		99.9	2,500		59.1	57-127	94.9 #	24
Carbon disulfide	1,800		99.9	2,500	8.5	71.7	70-130	31.9 #	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1,390		99.9	2,500		55.6#	70-130	93.4 #	30
Acetone	1,490		500	2,500		59.7	50-150	26.6	30
Methylene chloride	2,190		99.9	2,500	11.5	87.0	70-130	8.84	30
Methyl acetate	3,670		250	2,500		147 #	70-130	38.0 #	30
trans-1,2-Dichloroethene	2,260		99.9	2,500		90.4	70-130	16.5	30
cis-1,2-Dichloroethene	2,340		99.9	2,500		93.6	70-130	23.0	30
Methyl tert-butyl ether	2,190		99.9	2,500		87.7	70-130	22.5	30
1,1-Dichloroethane	2,330		99.9	2,500		93.4	70-130	23.4	30
2-Butanone	2,350		250	2,500		94.0	50-150	18.2	30
Chloroform	2,330		99.9	2,500		93.3	70-130	23.5	30
1,2-Dichloroethane	2,220		99.9	2,500		89.0	70-130	24.6	30
1,1,1-Trichloroethane	2,110		99.9	2,500		84.6	70-130	24.3	30
Cyclohexane	2,910		99.9	2,500	147	111	70-130	14.6	30



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**Volatiles by EPA Method 8260 - GC/MS - Quality Control**

**Batch: B4I0204**

**Sample Type: Solid**

**Matrix Spike Dup (B4I0204-MSD1)**

**Source: 1408010-07**

Prepared: 8/19/2014 Analyzed: 8/19/2014

**Targets (Continued)**

ANALYTE	Result µg/Kg	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC Limits	RPD RPD	RPD Limit
Carbon tetrachloride	2,010		99.9	2,500		80.4 70-130	24.2	30
Benzene	2,370		99.9	2,500		95.0 72-128	15.6	22
Trichloroethene	2,140		99.9	2,500		85.6 76-128	23.8 #	22
Methylcyclohexane	4,520		99.9	2,500	408	165 # 70-130	49.6 #	30
1,2-Dichloropropane	2,170		99.9	2,500		86.9 70-130	25.6	30
Bromodichloromethane	2,240		99.9	2,500		89.7 70-130	24.6	30
cis-1,3-Dichloropropene	2,190		99.9	2,500		87.7 70-130	25.6	30
trans-1,3-Dichloropropene	2,190		99.9	2,500		87.8 70-130	25.9	30
1,1,2-Trichloroethane	2,090		99.9	2,500		83.8 70-130	26.9	30
Dibromochloromethane	2,170		99.9	2,500		86.7 70-130	25.3	30
Bromoform	1,990		99.9	2,500		79.8 70-130	26.4	30
4-Methyl-2-pentanone	3,500		250	2,500		140 # 70-130	10.7	30
Toluene	4,310		99.9	2,500	30.5	171 # 75-127	48.6 #	20
Tetrachloroethene	1,880		99.9	2,500		75.2 70-130	25.5	30
2-Hexanone	4,400		250	2,500		176 # 70-130	30.0	30
1,2-Dibromoethane	2,070		99.9	2,500		82.9 70-130	25.6	30
Chlorobenzene	2,050		99.9	2,500		82.1 78-127	25.9 #	21
Ethylbenzene	2,420		99.9	2,500	16.5	96.1 70-130	6.07	30
meta-/para-Xylene	16,600		200	5,000	1,520	302 # 70-130	104 #	30
ortho-Xylene	15,300		99.9	2,500	3,190	486 # 70-130	128 #	30
Styrene	2,290		99.9	2,500		91.8 70-130	10.2	30
Isopropylbenzene	2,070		99.9	2,500	13.0	82.4 70-130	21.4	30
1,1,2,2-Tetrachloroethane	2,170		99.9	2,500		86.8 70-130	18.7	30
1,3-Dichlorobenzene	2,030		99.9	2,500		81.4 70-130	23.5	30
1,4-Dichlorobenzene	2,020		99.9	2,500		80.7 70-130	23.6	30
1,2-Dichlorobenzene	1,930		99.9	2,500		77.3 70-130	26.0	30
1,2-Dibromo-3-chloropropane	3,010		250	2,500		121 50-150	8.09	30
1,2,4-Trichlorobenzene	1,420		250	2,500		56.9 # 70-130	8.96	30



Environmental Protection Agency  
**Region 6 Laboratory**

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**TCLP Volatiles by EPA Method 1311/8260 - GC/MS - Quality Control**

Batch: B4I0202

Sample Type: Liquid

**Blank (B4I0202-BLK1)**

Prepared: 8/29/2014 Analyzed: 8/29/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>1,2-Dichloroethane-d4</i>	50.0		50.0	100	86-117
<i>Toluene-d8</i>	51.9		50.0	104	85-113
<i>4-Bromofluorobenzene</i>	48.8		50.0	97.6	73-115

**Blank (B4I0202-BLK1)**

Prepared: 8/29/2014 Analyzed: 8/29/2014

**Targets**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers	Limit
Vinyl chloride	U		2.0
1,1-Dichloroethene	U		2.0
2-Butanone	U		5.0
Chloroform	U		2.0
1,2-Dichloroethane	U		2.0
Carbon tetrachloride	U		2.0
Benzene	U		2.0
Trichloroethene	U		2.0
Tetrachloroethene	U		2.0
Chlorobenzene	U		2.0
1,4-Dichlorobenzene	U		2.0



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**TCLP Volatiles by EPA Method 1311/8260 - GC/MS - Quality Control**

Batch: B4I0202

Sample Type: Liquid

**LCS (B4I0202-BS1)**

Prepared: 8/29/2014 Analyzed: 8/29/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>1,2-Dichloroethane-d4</i>	49.0		50.0	98.1	86-117
<i>Toluene-d8</i>	49.8		50.0	99.6	85-113
<i>4-Bromofluorobenzene</i>	48.0		50.0	96.0	73-115

**LCS (B4I0202-BS1)**

Prepared: 8/29/2014 Analyzed: 8/29/2014

**Targets**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	%REC %REC	%REC Limits
Vinyl chloride	41.8		2.0	50.0	83.6	76-130
1,1-Dichloroethene	49.7		2.0	50.0	99.5	76-127
2-Butanone	37.0		5.0	50.0	73.9	71-127
Chloroform	43.6		2.0	50.0	87.1	81-121
1,2-Dichloroethane	42.2		2.0	50.0	84.4	80-121
Carbon tetrachloride	43.4		2.0	50.0	86.9	78-121
Benzene	42.4		2.0	50.0	84.8	81-119
Trichloroethene	43.3		2.0	50.0	86.6	80-120
Tetrachloroethene	42.6		2.0	50.0	85.1	80-120
Chlorobenzene	41.1		2.0	50.0	82.3	81-118
1,4-Dichlorobenzene	41.6		2.0	50.0	83.2	80-117



**Environmental Protection Agency**  
**Region 6 Laboratory**

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**TCLP Volatiles by EPA Method 1311/8260 - GC/MS - Quality Control**

**Batch: B4I0202**

**Sample Type: Liquid**

**Matrix Spike (B4I0202-MS1)**

**Source: 1408010-03**

Prepared: 8/29/2014 Analyzed: 8/29/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>1,2-Dichloroethane-d4</i>	49.3		50.0	98.6	86-117
<i>Toluene-d8</i>	50.5		50.0	101	85-113
<i>4-Bromofluorobenzene</i>	48.8		50.0	97.6	73-115

**Matrix Spike (B4I0202-MS1)**

**Source: 1408010-03**

Prepared: 8/29/2014 Analyzed: 8/29/2014

**Targets**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits
Vinyl chloride	470		20.0	500		94.1	75-123
1,1-Dichloroethene	549		20.0	500		110	72-134
2-Butanone	732		50.0	500	83.2	130	51-139
Chloroform	481		20.0	500		96.2	75-125
1,2-Dichloroethane	480		20.0	500		95.9	73-126
Carbon tetrachloride	483		20.0	500		96.7	74-123
Benzene	1,070		20.0	500	597	95.2	79-122
Trichloroethene	487		20.0	500		97.4	79-126
Tetrachloroethene	475		20.0	500		95.0	80-115
Chlorobenzene	463		20.0	500		92.6	82-121
1,4-Dichlorobenzene	466		20.0	500		93.2	79-116



**Environmental Protection Agency**  
**Region 6 Laboratory**

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**TCLP Volatiles by EPA Method 1311/8260 - GC/MS - Quality Control**

**Batch: B4I0202**

**Sample Type: Liquid**

**Matrix Spike Dup (B4I0202-MSD1)**

**Source: 1408010-03**

Prepared: 8/29/2014 Analyzed: 8/29/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>1,2-Dichloroethane-d4</i>	49.4		50.0	98.8	86-117
<i>Toluene-d8</i>	51.1		50.0	102	85-113
<i>4-Bromofluorobenzene</i>	49.2		50.0	98.3	73-115

**Matrix Spike Dup (B4I0202-MSD1)**

**Source: 1408010-03**

Prepared: 8/29/2014 Analyzed: 8/29/2014

**Targets**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
Vinyl chloride	448		20.0	500		89.7	75-123	4.75	16
1,1-Dichloroethene	518		20.0	500		104	72-134	5.78	21
2-Butanone	682		50.0	500	83.2	120	51-139	7.03	21
Chloroform	452		20.0	500		90.4	75-125	6.15	13
1,2-Dichloroethane	451		20.0	500		90.1	73-126	6.21	13
Carbon tetrachloride	454		20.0	500		90.7	74-123	6.38	14
Benzene	1,020		20.0	500	597	84.0	79-122	5.37	16
Trichloroethene	460		20.0	500		91.9	79-126	5.79	14
Tetrachloroethene	450		20.0	500		90.1	80-115	5.30	12
Chlorobenzene	437		20.0	500		87.4	82-121	5.73	10
1,4-Dichlorobenzene	443		20.0	500		88.6	79-116	5.06	11



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**Region 6 Laboratory**

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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

Batch: B4H1805

Sample Type: Liquid

**Blank (B4H1805-BLK1)**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC	%REC Limits
2-Fluorophenol	57.9		75.0	77.2	42-109
Phenol-d5	61.5		75.0	82.0	46-110
2-Chlorophenol-d4	60.6		75.0	80.7	47-103
1,2-Dichlorobenzene-d4	29.4		50.0	58.7	33-100
Nitrobenzene-d5	41.8		50.0	83.5	42-126
2-Fluorobiphenyl	37.3		50.0	74.5	50-104
2,4,6-Tribromophenol	64.5		75.0	86.0	59-142
Terphenyl-d14	50.4		50.0	101	61-125

**Blank (B4H1805-BLK1)**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers	Limit
Benzaldehyde	U		5.0
Phenol	U		5.0
Bis(2-chloroethyl)ether	U		5.0
2-Chlorophenol	U		5.0
1,3-Dichlorobenzene	U		5.0
1,4-Dichlorobenzene	U		5.0
Benzyl alcohol	U		5.0
1,2-Dichlorobenzene	U		5.0
2-Methylphenol	U		5.0
Bis(2-chloro-1-methylethyl)ether	U		5.0
Acetophenone	U		5.0
3 &/or 4-Methylphenol	U		5.0
N-Nitrosodi-n-propylamine	U		5.0
Hexachloroethane	U		5.0
Nitrobenzene	U		5.0
Isophorone	U		5.0



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

Batch: B4H1805

Sample Type: Liquid

**Blank (B4H1805-BLK1)**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers Limit
2-Nitrophenol	U	5.0
2,4-Dimethylphenol	U	5.0
Bis(2-chloroethoxy)methane	U	5.0
Benzoic acid	U	10.0
2,4-Dichlorophenol	U	5.0
1,2,4-Trichlorobenzene	U	5.0
Naphthalene	U	2.0
4-Chloroaniline	U	5.0
Hexachlorobutadiene	U	5.0
Caprolactam	U	5.0
4-Chloro-3-methylphenol	U	5.0
2-Methylnaphthalene	U	2.0
Hexachlorocyclopentadiene	U	5.0
2,4,6-Trichlorophenol	U	5.0
2,4,5-Trichlorophenol	U	5.0
2-Chloronaphthalene	U	5.0
1,1'-Biphenyl	U	5.0
2-Nitroaniline	U	8.0
Dimethyl phthalate	U	5.0
Acenaphthylene	U	2.0
2,6-Dinitrotoluene	U	5.0
3-Nitroaniline	U	8.0
Acenaphthene	U	2.0
2,4-Dinitrophenol	U	20.0
4-Nitrophenol	U	13.0
Dibenzofuran	U	5.0
2,4-Dinitrotoluene	U	5.0
Fluorene	U	2.0
Diethyl phthalate	U	5.0
4-Chlorophenyl phenyl ether	U	5.0



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

Batch: B4H1805

Sample Type: Liquid

**Blank (B4H1805-BLK1)**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers Limit
4-Nitroaniline	U	8.0
4,6-Dinitro-2-methylphenol	U	20.0
N-Nitrosodiphenylamine	U	5.0
4-Bromophenyl phenyl ether	U	5.0
Hexachlorobenzene	U	5.0
Atrazine	U	5.0
Pentachlorophenol	U	5.0
Phenanthrene	U	2.0
Anthracene	U	2.0
Carbazole	U	5.0
Di-n-butyl phthalate	U	5.0
Fluoranthene	U	2.0
Pyrene	U	2.0
Butyl benzyl phthalate	U	5.0
Benzo (a) anthracene	U	5.0
3,3'-Dichlorobenzidine	U	5.0
Chrysene	U	5.0
Bis(2-ethylhexyl)phthalate	U	5.0
Di-n-octyl phthalate	U	5.0
Benzo (b) fluoranthene	U	5.0
Benzo (k) fluoranthene	U	5.0
Benzo (a) pyrene	U	5.0
Indeno (1,2,3-cd) pyrene	U	5.0
Dibenz (a,h) anthracene	U	5.0
Benzo (g,h,i) perylene	U	5.0



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

Batch: B4H1805

Sample Type: Liquid

**LCS (B4H1805-BS1)**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
2-Fluorophenol	66.6		75.0	88.8	42-109
Phenol-d5	66.4		75.0	88.5	46-110
2-Chlorophenol-d4	69.8		75.0	93.1	47-103
1,2-Dichlorobenzene-d4	38.8		50.0	77.6	33-100
Nitrobenzene-d5	48.1		50.0	96.2	42-126
2-Fluorobiphenyl	44.3		50.0	88.5	50-104
2,4,6-Tribromophenol	78.7		75.0	105	59-142
Terphenyl-d14	47.2		50.0	94.4	61-125

**LCS (B4H1805-BS1)**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers Limit	Spike Level	%REC %REC	%REC Limits
Benzaldehyde	28.7	5.0	37.5	76.5	57-123
Phenol	33.6	5.0	37.5	89.6	60-116
Bis(2-chloroethyl)ether	35.4	5.0	37.5	94.4	74-112
2-Chlorophenol	34.8	5.0	37.5	92.8	64-116
1,3-Dichlorobenzene	30.6	5.0	37.5	81.6	32-100
1,4-Dichlorobenzene	30.9	5.0	37.5	82.5	35-100
Benzyl alcohol	34.4	5.0	37.5	91.6	63-125
1,2-Dichlorobenzene	31.8	5.0	37.5	84.9	46-100
2-Methylphenol	34.9	5.0	37.5	93.0	66-124
Bis(2-chloro-1-methylethyl)ether	36.1	5.0	37.5	96.2	63-122
Acetophenone	35.3	5.0	37.5	94.2	74-119
3 &/or 4-Methylphenol	34.2	5.0	37.5	91.3	66-125
N-Nitrosodi-n-propylamine	36.3	5.0	37.5	96.7	65-118
Hexachloroethane	29.2	5.0	37.5	77.9	16-103
Nitrobenzene	36.5	5.0	37.5	97.5	76-114
Isophorone	37.3	5.0	37.5	99.5	76-116



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1805**

**Sample Type: Liquid**

**LCS (B4H1805-BS1)**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	%REC Limits
2-Nitrophenol	38.3		5.0	37.5	102 77-121
2,4-Dimethylphenol	31.4		5.0	37.5	83.8 57-115
Bis(2-chloroethoxy)methane	36.7		5.0	37.5	97.9 75-114
Benzoic acid	30.0		10.0	37.5	80.1 37-135
2,4-Dichlorophenol	35.9		5.0	37.5	95.8 80-113
1,2,4-Trichlorobenzene	33.0		5.0	37.5	88.1 42-103
Naphthalene	35.7		2.0	37.5	95.3 70-106
4-Chloroaniline	32.0		5.0	37.5	85.4 51-118
Hexachlorobutadiene	30.6		5.0	37.5	81.6 25-115
Caprolactam	36.6		5.0	37.5	97.7 53-130
4-Chloro-3-methylphenol	35.7		5.0	37.5	95.1 63-117
2-Methylnaphthalene	35.6		2.0	37.5	94.8 67-110
Hexachlorocyclopentadiene	36.0		5.0	37.5	95.9 37-127
2,4,6-Trichlorophenol	37.2		5.0	37.5	99.1 77-115
2,4,5-Trichlorophenol	37.8		5.0	37.5	101 78-116
2-Chloronaphthalene	35.7		5.0	37.5	95.1 70-110
1,1'-Biphenyl	36.2		5.0	37.5	96.4 63-118
2-Nitroaniline	41.2		8.0	37.5	110 74-125
Dimethyl phthalate	36.3		5.0	37.5	96.7 79-111
Acenaphthylene	37.3		2.0	37.5	99.6 73-115
2,6-Dinitrotoluene	38.1		5.0	37.5	102 77-122
3-Nitroaniline	39.2		8.0	37.5	104 61-139
Acenaphthene	36.2		2.0	37.5	96.6 63-112
2,4-Dinitrophenol	30.4		20.0	37.5	81.1 40-151
4-Nitrophenol	36.9		13.0	37.5	98.3 49-137
Dibenzofuran	36.7		5.0	37.5	97.8 74-112
2,4-Dinitrotoluene	37.1		5.0	37.5	99.0 59-120
Fluorene	35.9		2.0	37.5	95.8 74-114
Diethyl phthalate	35.5		5.0	37.5	94.6 79-115
4-Chlorophenyl phenyl ether	34.3		5.0	37.5	91.4 71-115



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

Batch: B4H1805

Sample Type: Liquid

**LCS (B4H1805-BS1)**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers Limit	Spike Level	%REC %REC Limits
4-Nitroaniline	43.8	8.0	37.5	117 61-149
4,6-Dinitro-2-methylphenol	35.7	20.0	37.5	95.2 46-148
N-Nitrosodiphenylamine	36.3	5.0	37.5	96.9 76-117
4-Bromophenyl phenyl ether	36.3	5.0	37.5	96.8 77-114
Hexachlorobenzene	35.6	5.0	37.5	94.9 76-114
Atrazine	38.5	5.0	37.5	103 78-125
Pentachlorophenol	38.0	5.0	37.5	101 46-133
Phenanthrene	37.5	2.0	37.5	99.9 76-115
Anthracene	38.4	2.0	37.5	102 77-117
Carbazole	40.8	5.0	37.5	109 73-128
Di-n-butyl phthalate	38.3	5.0	37.5	102 82-126
Fluoranthene	37.1	2.0	37.5	98.9 75-122
Pyrene	33.0	2.0	37.5	88.1 59-131
Butyl benzyl phthalate	36.1	5.0	37.5	96.3 86-127
Benzo (a) anthracene	39.4	5.0	37.5	105 83-117
3,3'-Dichlorobenzidine	44.6	5.0	37.5	119 38-146
Chrysene	37.8	5.0	37.5	101 80-115
Bis(2-ethylhexyl)phthalate	35.4	5.0	37.5	94.5 83-135
Di-n-octyl phthalate	36.9	5.0	37.5	98.3 72-138
Benzo (b) fluoranthene	36.4	5.0	37.5	96.9 73-127
Benzo (k) fluoranthene	39.7	5.0	37.5	106 73-128
Benzo (a) pyrene	41.0	5.0	37.5	109 75-127
Indeno (1,2,3-cd) pyrene	40.9	5.0	37.5	109 66-147
Dibenz (a,h) anthracene	41.6	5.0	37.5	111 68-144
Benzo (g,h,i) perylene	40.7	5.0	37.5	108 63-148



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1805**

**Sample Type: Liquid**

**Matrix Spike (B4H1805-MS1)**

**Source: 1408010-01**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC	%REC Limits
<i>2-Fluorophenol</i>	58.6		78.2	75.0	42-109
<i>Phenol-d5</i>	53.5		78.2	68.5	46-110
<i>2-Chlorophenol-d4</i>	62.2		78.2	79.6	47-103
<i>1,2-Dichlorobenzene-d4</i>	33.9		52.1	65.1	33-100
<i>Nitrobenzene-d5</i>	43.7		52.1	83.8	42-126
<i>2-Fluorobiphenyl</i>	43.6		52.1	83.7	50-104
<i>2,4,6-Tribromophenol</i>	91.8		78.2	117	59-142
<i>Terphenyl-d14</i>	54.2		52.1	104	61-125

**Matrix Spike (B4H1805-MS1)**

**Source: 1408010-01**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers Limit	Spike Level	Source Result	%REC	%REC Limits
Benzaldehyde	15.8	5.2	39.1		40.4#	53-136
Phenol	353	52.1	39.1	335	46.9	41-114
Bis(2-chloroethyl)ether	32.5	5.2	39.1		83.1	62-125
2-Chlorophenol	30.8	5.2	39.1		78.6	46-114
1,3-Dichlorobenzene	23.4	5.2	39.1		59.8	36-100
1,4-Dichlorobenzene	24.0	5.2	39.1		61.3	34-100
Benzyl alcohol	31.1	5.2	39.1	0.3	79.0	67-119
1,2-Dichlorobenzene	25.1	5.2	39.1		64.2	48-100
2-Methylphenol	32.5	5.2	39.1	1.9	78.1	60-131
Bis(2-chloro-1-methylethyl)ether	32.4	5.2	39.1		82.8	51-138
Acetophenone	30.2	5.2	39.1		77.3	63-134
3 &/or 4-Methylphenol	35.1	5.2	39.1	3.2	81.4	57-136
N-Nitrosodi-n-propylamine	31.2	5.2	39.1		79.8	50-116
Hexachloroethane	23.5	5.2	39.1		60.2	24-100
Nitrobenzene	34.1	5.2	39.1		87.1	68-126
Isophorone	37.6	5.2	39.1		96.1	67-125



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

Batch: B4H1805

Sample Type: Liquid

**Matrix Spike (B4H1805-MS1)**

Source: 1408010-01

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits
2-Nitrophenol	37.7		5.2	39.1		96.5	62-137
2,4-Dimethylphenol	36.8		5.2	39.1		94.2	48-136
Bis(2-chloroethoxy)methane	34.9		5.2	39.1		89.1	66-126
Benzoic acid	46.9		10.4	39.1	29.3	44.8	41-134
2,4-Dichlorophenol	35.7		5.2	39.1		91.4	69-125
1,2,4-Trichlorobenzene	30.8		5.2	39.1		78.8	38-106
Naphthalene	33.2		2.1	39.1		84.9	65-115
4-Chloroaniline	16.4		5.2	39.1		42.1#	54-122
Hexachlorobutadiene	29.8		5.2	39.1		76.2	29-112
Caprolactam	40.5		5.2	39.1		103	56-124
4-Chloro-3-methylphenol	37.7		5.2	39.1		96.3	44-137
2-Methylnaphthalene	34.8		2.1	39.1		89.0	64-117
Hexachlorocyclopentadiene	9.2		5.2	39.1		23.5#	32-122
2,4,6-Trichlorophenol	40.4		5.2	39.1		103	65-128
2,4,5-Trichlorophenol	41.0		5.2	39.1		105	68-127
2-Chloronaphthalene	35.5		5.2	39.1		90.9	62-122
1,1'-Biphenyl	36.3		5.2	39.1		92.8	60-129
2-Nitroaniline	42.5		8.3	39.1		109	65-126
Dimethyl phthalate	38.0		5.2	39.1		97.2	71-122
Acenaphthylene	36.3		2.1	39.1		92.8	70-121
2,6-Dinitrotoluene	40.1		5.2	39.1		102	68-128
3-Nitroaniline	29.8		8.3	39.1		76.2	57-136
Acenaphthene	37.0		2.1	39.1		94.5	41-131
2,4-Dinitrophenol	39.2		20.9	39.1		100	42-152
4-Nitrophenol	39.9		13.6	39.1		102	39-152
Dibenzofuran	37.5		5.2	39.1		95.9	67-123
2,4-Dinitrotoluene	37.8		5.2	39.1		96.8	57-123
Fluorene	37.0		2.1	39.1		94.5	65-129
Diethyl phthalate	37.2		5.2	39.1		95.0	72-124
4-Chlorophenyl phenyl ether	35.5		5.2	39.1		90.8	63-130



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1805**

**Sample Type: Liquid**

**Matrix Spike (B4H1805-MS1)**

**Source: 1408010-01**

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC Limits
4-Nitroaniline	29.1		8.3	39.1		74.4 64-137
4,6-Dinitro-2-methylphenol	39.9		20.9	39.1		102 46-146
N-Nitrosodiphenylamine	38.7		5.2	39.1		98.9 66-125
4-Bromophenyl phenyl ether	38.4		5.2	39.1		98.3 64-123
Hexachlorobenzene	37.6		5.2	39.1		96.3 67-121
Atrazine	14.6		5.2	39.1		37.3# 74-127
Pentachlorophenol	47.5		5.2	39.1	0.3	121 55-146
Phenanthrene	39.4		2.1	39.1		101 69-121
Anthracene	39.6		2.1	39.1		101 68-122
Carbazole	41.9		5.2	39.1		107 71-124
Di-n-butyl phthalate	38.8		5.2	39.1		99.3 75-136
Fluoranthene	35.6		2.1	39.1		90.9 74-123
Pyrene	37.5		2.1	39.1		95.8 54-133
Butyl benzyl phthalate	40.2		5.2	39.1		103 77-132
Benzo (a) anthracene	41.3		5.2	39.1		106 76-125
3,3'-Dichlorobenzidine	15.1		5.2	39.1		38.6# 40-139
Chrysene	38.9		5.2	39.1		99.4 76-125
Bis(2-ethylhexyl)phthalate	37.3		5.2	39.1	0.2	94.7 79-138
Di-n-octyl phthalate	39.6		5.2	39.1		101 64-134
Benzo (b) fluoranthene	39.3		5.2	39.1		101 70-130
Benzo (k) fluoranthene	41.6		5.2	39.1		106 68-136
Benzo (a) pyrene	42.5		5.2	39.1		109 75-125
Indeno (1,2,3-cd) pyrene	45.8		5.2	39.1		117 65-143
Dibenz (a,h) anthracene	47.4		5.2	39.1		121 61-145
Benzo (g,h,i) perylene	45.2		5.2	39.1		116 67-142



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

Batch: B4H1805

Sample Type: Liquid

**Matrix Spike Dup (B4H1805-MSD1)**

Source: 1408010-01

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
2-Fluorophenol	42.8		78.0	54.8	42-109
Phenol-d5	46.6		78.0	59.7	46-110
2-Chlorophenol-d4	48.3		78.0	61.9	47-103
1,2-Dichlorobenzene-d4	21.7		52.0	41.7	33-100
Nitrobenzene-d5	33.7		52.0	64.8	42-126
2-Fluorobiphenyl	40.6		52.0	78.1	50-104
2,4,6-Tribromophenol	87.2		78.0	112	59-142
Terphenyl-d14	50.0		52.0	96.2	61-125

**Matrix Spike Dup (B4H1805-MSD1)**

Source: 1408010-01

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
Benzaldehyde	13.3		5.2	39.0		34.2#	53-136	17.0	30
Phenol	288		52.0	39.0	335	NR #	41-114	20.4	32
Bis(2-chloroethyl)ether	24.5		5.2	39.0		62.8	62-125	28.1	30
2-Chlorophenol	24.0		5.2	39.0		61.5	46-114	24.8	27
1,3-Dichlorobenzene	15.3		5.2	39.0		39.4	36-100	41.5 #	30
1,4-Dichlorobenzene	16.0		5.2	39.0		40.9	34-100	40.0 #	32
Benzyl alcohol	27.4		5.2	39.0	0.3	69.5	67-119	12.9	30
1,2-Dichlorobenzene	17.1		5.2	39.0		43.9#	48-100	37.9 #	30
2-Methylphenol	28.7		5.2	39.0	1.9	68.7	60-131	12.3	30
Bis(2-chloro-1-methylethyl)ether	25.0		5.2	39.0		64.3	51-138	25.6	30
Acetophenone	25.0		5.2	39.0		64.2	63-134	18.7	30
3 &/or 4-Methylphenol	31.6		5.2	39.0	3.2	72.8	57-136	10.3	30
N-Nitrosodi-n-propylamine	26.6		5.2	39.0		68.3	50-116	15.9	29
Hexachloroethane	15.7		5.2	39.0		40.3	24-100	39.9 #	30
Nitrobenzene	27.0		5.2	39.0		69.2	68-126	23.2	30
Isophorone	33.4		5.2	39.0		85.7	67-125	11.7	30



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

Batch: B4H1805

Sample Type: Liquid

**Matrix Spike Dup (B4H1805-MSD1)**

Source: 1408010-01

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers Limit	Spike Level	Source Result	%REC %REC Limits	RPD RPD Limit
2-Nitrophenol	30.7	5.2	39.0		78.8 62-137	20.4 30
2,4-Dimethylphenol	33.1	5.2	39.0		85.0 48-136	10.6 30
Bis(2-chloroethoxy)methane	29.0	5.2	39.0		74.4 66-126	18.3 30
Benzoic acid	112	104	39.0	29.3	211 # 41-134	81.7 # 30
2,4-Dichlorophenol	31.7	5.2	39.0		81.2 69-125	12.1 30
1,2,4-Trichlorobenzene	23.5	5.2	39.0		60.3 38-106	27.0 # 26
Naphthalene	26.4	2.1	39.0		67.8 65-115	22.7 30
4-Chloroaniline	17.9	5.2	39.0		45.9# 54-122	8.50 30
Hexachlorobutadiene	22.2	5.2	39.0		56.9 29-112	29.4 30
Caprolactam	38.7	5.2	39.0		99.3 56-124	4.45 30
4-Chloro-3-methylphenol	36.7	5.2	39.0		94.2 44-137	2.54 30
2-Methylnaphthalene	30.2	2.1	39.0		77.4 64-117	14.3 30
Hexachlorocyclopentadiene	10.6	5.2	39.0		27.2# 32-122	14.2 30
2,4,6-Trichlorophenol	38.3	5.2	39.0		98.2 65-128	5.45 30
2,4,5-Trichlorophenol	39.4	5.2	39.0		101 68-127	4.01 30
2-Chloronaphthalene	31.9	5.2	39.0		81.8 62-122	10.9 30
1,1'-Biphenyl	32.9	5.2	39.0		84.3 60-129	9.89 30
2-Nitroaniline	41.7	8.3	39.0		107 65-126	1.78 30
Dimethyl phthalate	36.4	5.2	39.0		93.5 71-122	4.23 30
Acenaphthylene	33.4	2.1	39.0		85.7 70-121	8.30 30
2,6-Dinitrotoluene	38.7	5.2	39.0		99.4 68-128	3.38 30
3-Nitroaniline	32.0	8.3	39.0		82.0 57-136	7.03 30
Acenaphthene	34.0	2.1	39.0		87.2 41-131	8.37 33
2,4-Dinitrophenol	41.1	20.8	39.0		105 42-152	4.56 30
4-Nitrophenol	40.5	13.5	39.0		104 39-152	1.47 34
Dibenzofuran	35.4	5.2	39.0		90.7 67-123	5.85 30
2,4-Dinitrotoluene	37.6	5.2	39.0		96.5 57-123	0.61 16
Fluorene	35.0	2.1	39.0		89.8 65-129	5.50 30
Diethyl phthalate	35.8	5.2	39.0		91.9 72-124	3.69 30
4-Chlorophenyl phenyl ether	33.7	5.2	39.0		86.5 63-130	5.18 30



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

Batch: B4H1805

Sample Type: Liquid

**Matrix Spike Dup (B4H1805-MSD1)**

Source: 1408010-01

Prepared: 8/20/2014 Analyzed: 8/20/2014

**Targets (Continued)**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers Limit	Spike Level	Source Result	%REC Limits	RPD RPD Limit
4-Nitroaniline	37.3	8.3	39.0		95.8 64-137	24.9 30
4,6-Dinitro-2-methylphenol	41.1	20.8	39.0		105 46-146	2.87 30
N-Nitrosodiphenylamine	36.6	5.2	39.0		94.0 66-125	5.49 30
4-Bromophenyl phenyl ether	36.4	5.2	39.0		93.4 64-123	5.41 30
Hexachlorobenzene	34.8	5.2	39.0		89.2 67-121	7.90 30
Atrazine	13.9	5.2	39.0		35.6# 74-127	4.85 30
Pentachlorophenol	45.8	5.2	39.0	0.3	117 55-146	3.51 21
Phenanthrene	37.1	2.1	39.0		95.2 69-121	5.86 30
Anthracene	37.7	2.1	39.0		96.8 68-122	4.93 30
Carbazole	40.6	5.2	39.0		104 71-124	3.21 30
Di-n-butyl phthalate	36.0	5.2	39.0		92.3 75-136	7.68 30
Fluoranthene	33.8	2.1	39.0		86.8 74-123	5.01 30
Pyrene	34.4	2.1	39.0		88.3 54-133	8.44 21
Butyl benzyl phthalate	38.1	5.2	39.0		97.7 77-132	5.33 30
Benzo (a) anthracene	39.5	5.2	39.0		101 76-125	4.48 30
3,3'-Dichlorobenzidine	15.3	5.2	39.0		39.3# 40-139	1.43 30
Chrysene	37.4	5.2	39.0		95.9 76-125	3.93 30
Bis(2-ethylhexyl)phthalate	37.0	5.2	39.0	0.2	94.4 79-138	0.68 30
Di-n-octyl phthalate	39.3	5.2	39.0		101 64-134	0.78 30
Benzo (b) fluoranthene	42.1	5.2	39.0		108 70-130	6.71 30
Benzo (k) fluoranthene	36.7	5.2	39.0		94.1 68-136	12.6 30
Benzo (a) pyrene	40.7	5.2	39.0		104 75-125	4.54 30
Indeno (1,2,3-cd) pyrene	45.2	5.2	39.0		116 65-143	1.22 30
Dibenz (a,h) anthracene	46.7	5.2	39.0		120 61-145	1.47 30
Benzo (g,h,i) perylene	43.7	5.2	39.0		112 67-142	3.20 30



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**Blank (B4H1904-BLK1)**

Prepared: 8/21/2014 Analyzed: 8/22/2014

**Surrogates**

ANALYTE	Result µg/kg dry	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>2-Fluorophenol</i>	4,530		7,500	60.5	29-100
<i>Phenol-d5</i>	4,880		7,500	65.1	37-100
<i>2-Chlorophenol-d4</i>	4,740		7,500	63.2	33-100
<i>1,2-Dichlorobenzene-d4</i>	2,570		5,000	51.5	28-100
<i>Nitrobenzene-d5</i>	3,010		5,000	60.2	28-100
<i>2-Fluorobiphenyl</i>	3,570		5,000	71.4	37-110
<i>2,4,6-Tribromophenol</i>	5,440		7,500	72.5	41-137
<i>Terphenyl-d14</i>	4,180		5,000	83.5	46-138

**Blank (B4H1904-BLK1)**

Prepared: 8/21/2014 Analyzed: 8/22/2014

**Targets**

ANALYTE	Result µg/kg dry	Analyte Reporting Qualifiers Limit
Benzaldehyde	U	500
Phenol	U	500
Bis(2-chloroethyl)ether	U	500
2-Chlorophenol	U	500
1,3-Dichlorobenzene	U	500
1,4-Dichlorobenzene	U	500
Benzyl alcohol	U	500
1,2-Dichlorobenzene	U	500
2-Methylphenol	U	500
Bis(2-chloro-1-methylethyl)ether	U	500
Acetophenone	U	500
3 &/or 4-Methylphenol	U	500
N-Nitrosodi-n-propylamine	U	500
Hexachloroethane	U	500
Nitrobenzene	U	500
Isophorone	U	500



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

Batch: B4H1904

Sample Type: Solid

**Blank (B4H1904-BLK1)**

Prepared: 8/21/2014 Analyzed: 8/22/2014

**Targets (Continued)**

ANALYTE	Result µg/kg dry	Analyte Reporting Qualifiers	Reporting Limit
2-Nitrophenol	U		500
2,4-Dimethylphenol	U		500
Bis(2-chloroethoxy)methane	U		500
Benzoic acid	U		1,000
2,4-Dichlorophenol	U		500
1,2,4-Trichlorobenzene	U		500
Naphthalene	U		200
4-Chloroaniline	U		500
Hexachlorobutadiene	U		500
Caprolactam	U		500
4-Chloro-3-methylphenol	U		500
2-Methylnaphthalene	U		200
Hexachlorocyclopentadiene	U		500
2,4,6-Trichlorophenol	U		500
2,4,5-Trichlorophenol	U		500
2-Chloronaphthalene	U		500
1,1'-Biphenyl	U		500
2-Nitroaniline	U		800
Dimethyl phthalate	U		500
Acenaphthylene	U		200
2,6-Dinitrotoluene	U		500
3-Nitroaniline	U		800
Acenaphthene	U		200
2,4-Dinitrophenol	U		2,000
4-Nitrophenol	U		1,300
Dibenzofuran	U		500
2,4-Dinitrotoluene	U		500
Fluorene	U		200
Diethyl phthalate	U		500
4-Chlorophenyl phenyl ether	U		500



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**Blank (B4H1904-BLK1)**

Prepared: 8/21/2014 Analyzed: 8/22/2014

**Targets (Continued)**

ANALYTE	Result μg/kg dry	Analyte Reporting Qualifiers	Reporting Limit
4-Nitroaniline	U		800
4,6-Dinitro-2-methylphenol	U		2,000
N-Nitrosodiphenylamine	U		500
4-Bromophenyl phenyl ether	U		500
Hexachlorobenzene	U		500
Atrazine	U		500
Pentachlorophenol	U		500
Phenanthrene	U		200
Anthracene	U		200
Carbazole	U		500
Di-n-butyl phthalate	U		500
Fluoranthene	U		200
Pyrene	U		200
Butyl benzyl phthalate	U		500
Benzo (a) anthracene	U		500
3,3'-Dichlorobenzidine	U		500
Chrysene	U		500
Bis(2-ethylhexyl)phthalate	U		500
Di-n-octyl phthalate	U		500
Benzo (b) fluoranthene	U		500
Benzo (k) fluoranthene	U		500
Benzo (a) pyrene	U		500
Indeno (1,2,3-cd) pyrene	U		500
Dibenz (a,h) anthracene	U		500
Benzo (g,h,i) perylene	U		500



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**LCS (B4H1904-BS1)**

Prepared: 8/21/2014 Analyzed: 8/22/2014

**Surrogates**

ANALYTE	Result µg/kg dry	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>2-Fluorophenol</i>	5,080		7,500	67.7	29-100
<i>Phenol-d5</i>	5,280		7,500	70.5	37-100
<i>2-Chlorophenol-d4</i>	5,370		7,500	71.6	33-100
<i>1,2-Dichlorobenzene-d4</i>	2,930		5,000	58.5	28-100
<i>Nitrobenzene-d5</i>	3,420		5,000	68.5	28-100
<i>2-Fluorobiphenyl</i>	3,940		5,000	78.8	37-110
<i>2,4,6-Tribromophenol</i>	7,380		7,500	98.4	41-137
<i>Terphenyl-d14</i>	4,580		5,000	91.5	46-138

**LCS (B4H1904-BS1)**

Prepared: 8/21/2014 Analyzed: 8/22/2014

**Targets**

ANALYTE	Result µg/kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	%REC %REC	%REC Limits
Benzaldehyde	3,320		500	5,000	66.4	23-104
Phenol	3,700		500	5,000	74.1	43-105
Bis(2-chloroethyl)ether	3,570		500	5,000	71.3	42-100
2-Chlorophenol	3,690		500	5,000	73.9	44-101
1,3-Dichlorobenzene	3,110		500	5,000	62.3	39-100
1,4-Dichlorobenzene	3,180		500	5,000	63.7	35-100
Benzyl alcohol	3,570		500	5,000	71.4	39-113
1,2-Dichlorobenzene	3,290		500	5,000	65.8	41-100
2-Methylphenol	3,570		500	5,000	71.4	40-100
Bis(2-chloro-1-methylethyl)ether	3,440		500	5,000	68.7	42-101
Acetophenone	3,660		500	5,000	73.2	38-116
3 &/or 4-Methylphenol	3,560		500	5,000	71.2	43-102
N-Nitrosodi-n-propylamine	3,600		500	5,000	71.9	44-105
Hexachloroethane	3,160		500	5,000	63.3	39-100
Nitrobenzene	3,720		500	5,000	74.5	45-106
Isophorone	3,700		500	5,000	74.0	47-108



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**LCS (B4H1904-BS1)**

Prepared: 8/21/2014 Analyzed: 8/22/2014

**Targets (Continued)**

ANALYTE	Result µg/kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	%REC Limits
2-Nitrophenol	4,100		500	5,000	82.0 47-109
2,4-Dimethylphenol	3,000		500	5,000	60.0 27-91.5
Bis(2-chloroethoxy)methane	3,900		500	5,000	78.0 48-103
Benzoic acid	1,660		1,000	5,000	33.2 10-142
2,4-Dichlorophenol	3,990		500	5,000	79.8 50-105
1,2,4-Trichlorobenzene	3,720		500	5,000	74.5 43-102
Naphthalene	3,700		200	5,000	73.9 45-103
4-Chloroaniline	3,220		500	5,000	64.4 33-103
Hexachlorobutadiene	3,750		500	5,000	75.1 43-103
Caprolactam	4,190		500	5,000	83.9 54-153
4-Chloro-3-methylphenol	4,230		500	5,000	84.5 49-116
2-Methylnaphthalene	3,850		200	5,000	77.0 49-104
Hexachlorocyclopentadiene	3,110		500	5,000	62.2 24-119
2,4,6-Trichlorophenol	4,630		500	5,000	92.5 50-110
2,4,5-Trichlorophenol	4,650		500	5,000	93.0 54-112
2-Chloronaphthalene	4,170		500	5,000	83.4 49-103
1,1'-Biphenyl	4,090		500	5,000	81.8 50-105
2-Nitroaniline	4,610		800	5,000	92.1 55-119
Dimethyl phthalate	4,450		500	5,000	89.0 55-114
Acenaphthylene	4,160		200	5,000	83.3 51-108
2,6-Dinitrotoluene	4,570		500	5,000	91.5 60-116
3-Nitroaniline	4,000		800	5,000	80.1 43-124
Acenaphthene	4,120		200	5,000	82.5 52-103
2,4-Dinitrophenol	3,150		2,000	5,000	63.0 14-134
4-Nitrophenol	4,060		1,300	5,000	81.1 43-139
Dibenzofuran	4,200		500	5,000	84.1 53-107
2,4-Dinitrotoluene	4,360		500	5,000	87.2 51-120
Fluorene	4,080		200	5,000	81.7 55-111
Diethyl phthalate	4,290		500	5,000	85.8 58-122
4-Chlorophenyl phenyl ether	4,210		500	5,000	84.2 54-112



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**LCS (B4H1904-BS1)**

Prepared: 8/21/2014 Analyzed: 8/22/2014

**Targets (Continued)**

ANALYTE	Result µg/kg dry	Analyte Reporting Qualifiers	Reporting Limit	Spike Level	%REC	%REC Limits
4-Nitroaniline	4,660		800	5,000	93.1	52-145
4,6-Dinitro-2-methylphenol	3,670		2,000	5,000	73.5	10-133
N-Nitrosodiphenylamine	4,590		500	5,000	91.8	53-118
4-Bromophenyl phenyl ether	4,890		500	5,000	97.8	58-112
Hexachlorobenzene	4,790		500	5,000	95.8	57-112
Atrazine	4,810		500	5,000	96.3	70-128
Pentachlorophenol	4,460		500	5,000	89.3	28-121
Phenanthrene	4,550		200	5,000	91.1	59-114
Anthracene	4,560		200	5,000	91.2	57-115
Carbazole	5,030		500	5,000	101	65-125
Di-n-butyl phthalate	5,040		500	5,000	101	65-133
Fluoranthene	4,660		200	5,000	93.2	65-124
Pyrene	4,500		200	5,000	90.1	57-121
Butyl benzyl phthalate	5,180		500	5,000	104	56-143
Benzo (a) anthracene	4,880		500	5,000	97.7	67-125
3,3'-Dichlorobenzidine	5,770		500	5,000	116	46-153
Chrysene	4,650		500	5,000	92.9	67-120
Bis(2-ethylhexyl)phthalate	5,110		500	5,000	102	54-148
Di-n-octyl phthalate	5,120		500	5,000	102	61-135
Benzo (b) fluoranthene	4,750		500	5,000	95.1	62-135
Benzo (k) fluoranthene	4,890		500	5,000	97.7	65-132
Benzo (a) pyrene	5,180		500	5,000	104	67-128
Indeno (1,2,3-cd) pyrene	5,560		500	5,000	111	64-135
Dibenz (a,h) anthracene	5,640		500	5,000	113	66-136
Benzo (g,h,i) perylene	5,280		500	5,000	106	49-142



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**Matrix Spike (B4H1904-MS1)**

**Source: 1408010-07**

Prepared: 8/21/2014 Analyzed: 8/25/2014

**Surrogates**

ANALYTE	Result µg/kg dry	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
2-Fluorophenol	20,500		30,900	66.3	29-100
Phenol-d5	23,000		30,900	74.2	37-100
2-Chlorophenol-d4	22,700		30,900	73.3	33-100
1,2-Dichlorobenzene-d4	13,300		20,600	64.4	28-100
Nitrobenzene-d5	14,000		20,600	67.8	28-100
2-Fluorobiphenyl	18,900		20,600	91.6	37-110
2,4,6-Tribromophenol	33,500		30,900	108	41-137
Terphenyl-d14	18,800		20,600	91.1	46-138

**Matrix Spike (B4H1904-MS1)**

**Source: 1408010-07**

Prepared: 8/21/2014 Analyzed: 8/25/2014

**Targets**

ANALYTE	Result µg/kg dry	Analyte Reporting Qualifiers Limit	Spike Level	Source Result %REC	%REC Limits
Benzaldehyde	17,700	10,300	20,600		85.7 21-102
Phenol	15,900	10,300	20,600		77.1 37-102
Bis(2-chloroethyl)ether	14,500	10,300	20,600		70.5 31-104
2-Chlorophenol	15,900	10,300	20,600		76.9 33-100
1,3-Dichlorobenzene	13,900	10,300	20,600		67.2 38-95
1,4-Dichlorobenzene	13,500	10,300	20,600		65.6 26-100
Benzyl alcohol	15,300	10,300	20,600		74.2 44-106
1,2-Dichlorobenzene	14,700	10,300	20,600		71.3 39-97
2-Methylphenol	15,900	10,300	20,600		77.2 43-102
Bis(2-chloro-1-methylethyl)ether	14,400	10,300	20,600		69.9 36-102
Acetophenone	45,400	10,300	20,600		220# 36-110
3 &/or 4-Methylphenol	16,300	10,300	20,600		78.9 46-106
N-Nitrosodi-n-propylamine	20,500	10,300	20,600		99.5 34-103
Hexachloroethane	35,600	10,300	20,600		172# 36-96
Nitrobenzene	17,800	10,300	20,600		86.4 44-105
Isophorone	19,900	10,300	20,600		96.3 49-103



**Environmental Protection Agency**  
**Region 6 Laboratory**

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 Phone:(281)983-2100 Fax:(281)983-2248

**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**Matrix Spike (B4H1904-MS1)**

**Source: 1408010-07**

Prepared: 8/21/2014 Analyzed: 8/25/2014

**Targets (Continued)**

ANALYTE	Result µg/kg dry	Analyte Reporting Qualifiers	Limit	Spike Level	Source Result	%REC Limits
2-Nitrophenol	23,200		10,300	20,600		113 44-114
2,4-Dimethylphenol	14,100		10,300	20,600		68.4 28-111
Bis(2-chloroethoxy)methane	20,800		10,300	20,600		101 48-103
Benzoic acid	18,400		20,600	20,600		89.3 10-115
2,4-Dichlorophenol	23,600		10,300	20,600		114 50-117
1,2,4-Trichlorobenzene	20,300		10,300	20,600		98.3 33-100
Naphthalene	31,800		4,130	20,600	8,270	114 # 46-102
4-Chloroaniline	15,300		10,300	20,600		74.3 35-102
Hexachlorobutadiene	20,800		10,300	20,600		101 47-102
Caprolactam	131,000		10,300	20,600		633 # 48-156
4-Chloro-3-methylphenol	22,200		10,300	20,600		107 45-122
2-Methylnaphthalene	48,200		4,130	20,600	23,000	122 # 50-105
Hexachlorocyclopentadiene	7,590		10,300	20,600		36.8 21-113
2,4,6-Trichlorophenol	20,800		10,300	20,600		101 48-113
2,4,5-Trichlorophenol	21,900		10,300	20,600		106 52-121
2-Chloronaphthalene	14,700		10,300	20,600		71.4 48-105
1,1'-Biphenyl	19,100		10,300	20,600		92.6 40-118
2-Nitroaniline	19,500		16,500	20,600		94.4 53-124
Dimethyl phthalate	18,900		10,300	20,600		91.6 56-117
Acenaphthylene	21,300		4,130	20,600		103 48-111
2,6-Dinitrotoluene	24,500		10,300	20,600		119 56-120
3-Nitroaniline	15,600		16,500	20,600		75.4 51-122
Acenaphthene	23,400		4,130	20,600		114 37-119
2,4-Dinitrophenol	21,200		41,300	20,600		103 10-129
4-Nitrophenol	15,500		26,800	20,600		75.2 47-141
Dibenzofuran	24,900		10,300	20,600		120 # 50-111
2,4-Dinitrotoluene	31,400		10,300	20,600		152 # 44-125
Fluorene	30,900		4,130	20,600	3,850	131 # 51-116
Diethyl phthalate	19,700		10,300	20,600		95.5 51-136
4-Chlorophenyl phenyl ether	22,100		10,300	20,600		107 48-119



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**Matrix Spike (B4H1904-MS1)**

**Source: 1408010-07**

Prepared: 8/21/2014 Analyzed: 8/25/2014

**Targets (Continued)**

ANALYTE	Result μg/kg dry	Analyte Reporting Qualifiers Limit	Spike Level	Source Result	%REC %REC	Limit
4-Nitroaniline	22,100	16,500	20,600		107	62-140
4,6-Dinitro-2-methylphenol	15,000	41,300	20,600		72.6	10-130
N-Nitrosodiphenylamine	30,100	10,300	20,600		146 #	56-120
4-Bromophenyl phenyl ether	23,400	10,300	20,600		113	55-116
Hexachlorobenzene	21,000	10,300	20,600		102	55-116
Atrazine	41,800	10,300	20,600		202 #	63-133
Pentachlorophenol	16,200	10,300	20,600		78.4	16-134
Phenanthrene	28,100	4,130	20,600	5,420	110	52-121
Anthracene	21,400	4,130	20,600	1,140	98.4	53-123
Carbazole	21,500	10,300	20,600		104	61-133
Di-n-butyl phthalate	22,400	10,300	20,600		109	51-148
Fluoranthene	23,800	4,130	20,600		116	60-130
Pyrene	24,800	4,130	20,600	4,600	97.7	42-138
Butyl benzyl phthalate	23,600	10,300	20,600		114	59-140
Benzo (a) anthracene	22,100	10,300	20,600	423	105	58-129
3,3'-Dichlorobenzidine	29,100	10,300	20,600		141	54-148
Chrysene	21,400	10,300	20,600	964	98.9	58-128
Bis(2-ethylhexyl)phthalate	22,500	10,300	20,600	840	105	56-153
Di-n-octyl phthalate	23,400	10,300	20,600		114	61-138
Benzo (b) fluoranthene	20,400	10,300	20,600		99.1	65-126
Benzo (k) fluoranthene	20,500	10,300	20,600		99.3	59-135
Benzo (a) pyrene	21,500	10,300	20,600		104	69-125
Indeno (1,2,3-cd) pyrene	22,000	10,300	20,600		107	62-133
Dibenz (a,h) anthracene	22,100	10,300	20,600		107	62-135
Benzo (g,h,i) perylene	20,200	10,300	20,600		98.1	50-137



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**Matrix Spike Dup (B4H1904-MSD1)**

**Source: 1408010-07**

Prepared: 8/21/2014 Analyzed: 8/25/2014

**Surrogates**

ANALYTE	Result µg/kg dry	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>2-Fluorophenol</i>	22,000		30,700	71.5	29-100
<i>Phenol-d5</i>	24,300		30,700	79.2	37-100
<i>2-Chlorophenol-d4</i>	23,800		30,700	77.5	33-100
<i>1,2-Dichlorobenzene-d4</i>	14,000		20,500	68.1	28-100
<i>Nitrobenzene-d5</i>	14,900		20,500	72.6	28-100
<i>2-Fluorobiphenyl</i>	19,100		20,500	93.4	37-110
<i>2,4,6-Tribromophenol</i>	34,400		30,700	112	41-137
<i>Terphenyl-d14</i>	19,200		20,500	93.9	46-138

**Matrix Spike Dup (B4H1904-MSD1)**

**Source: 1408010-07**

Prepared: 8/21/2014 Analyzed: 8/25/2014

**Targets**

ANALYTE	Result µg/kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
Benzaldehyde	18,100		10,200	20,500		88.3	21-102	2.33	30
Phenol	16,700		10,200	20,500		81.7	37-102	5.15	36
Bis(2-chloroethyl)ether	15,400		10,200	20,500		75.4	31-104	6.07	30
2-Chlorophenol	16,600		10,200	20,500		81.1	33-100	4.58	37
1,3-Dichlorobenzene	14,200		10,200	20,500		69.2	38-95	2.26	30
1,4-Dichlorobenzene	14,800		10,200	20,500		72.4	26-100	9.22	34
Benzyl alcohol	15,900		10,200	20,500		77.7	44-106	3.88	30
1,2-Dichlorobenzene	15,600		10,200	20,500		75.9	39-97	5.60	30
2-Methylphenol	17,400		10,200	20,500		84.7	43-102	8.55	30
Bis(2-chloro-1-methylethyl)ether	14,900		10,200	20,500		72.5	36-102	2.94	30
Acetophenone	46,300		10,200	20,500		226#	36-110	1.78	30
3 &/or 4-Methylphenol	17,700		10,200	20,500		86.6	46-106	8.58	30
N-Nitrosodi-n-propylamine	21,100		10,200	20,500		103	34-103	2.93	32
Hexachloroethane	36,900		10,200	20,500		180#	36-96	3.66	30
Nitrobenzene	18,600		10,200	20,500		90.6	44-105	4.04	30
Isophorone	20,100		10,200	20,500		98.2	49-103	1.25	30



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**Matrix Spike Dup (B4H1904-MSD1)**

**Source: 1408010-07**

Prepared: 8/21/2014 Analyzed: 8/25/2014

**Targets (Continued)**

ANALYTE	Result µg/kg dry	Analyte Reporting Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	REC Limits	RPD RPD	RPD Limit
2-Nitrophenol	24,100		10,200	20,500		117 #	44-114	3.58	30
2,4-Dimethylphenol	21,400		10,200	20,500		105	28-111	41.2 #	30
Bis(2-chloroethoxy)methane	21,100		10,200	20,500		103	48-103	1.16	30
Benzoic acid	23,600		20,500	20,500		115	10-115	24.7	30
2,4-Dichlorophenol	24,100		10,200	20,500		118 #	50-117	2.48	30
1,2,4-Trichlorobenzene	21,100		10,200	20,500		103 #	33-100	4.06	33
Naphthalene	32,600		4,100	20,500	8,270	119 #	46-102	2.74	30
4-Chloroaniline	16,800		10,200	20,500		82.0	35-102	9.09	30
Hexachlorobutadiene	21,300		10,200	20,500		104 #	47-102	2.28	30
Caprolactam	133,000		10,200	20,500		647 #	48-156	1.52	30
4-Chloro-3-methylphenol	23,000		10,200	20,500		112	45-122	3.69	26
2-Methylnaphthalene	48,700		4,100	20,500	23,000	125 #	50-105	1.04	30
Hexachlorocyclopentadiene	8,120		10,200	20,500		39.6	21-113	6.77	30
2,4,6-Trichlorophenol	21,100		10,200	20,500		103	48-113	1.27	30
2,4,5-Trichlorophenol	22,700		10,200	20,500		111	52-121	3.67	30
2-Chloronaphthalene	15,000		10,200	20,500		73.4	48-105	2.02	30
1,1'-Biphenyl	19,400		10,200	20,500		94.6	40-118	1.40	30
2-Nitroaniline	20,200		16,400	20,500		98.4	53-124	3.42	30
Dimethyl phthalate	19,300		10,200	20,500		94.3	56-117	2.24	30
Acenaphthylene	21,500		4,100	20,500		105	48-111	0.62	30
2,6-Dinitrotoluene	22,800		10,200	20,500		111	56-120	7.26	30
3-Nitroaniline	16,900		16,400	20,500		82.4	51-122	8.22	30
Acenaphthene	23,900		4,100	20,500		116	37-119	1.78	30
2,4-Dinitrophenol	22,900		41,000	20,500		112	10-129	7.80	30
4-Nitrophenol	15,000		26,600	20,500		73.3	47-141	3.19	30
Dibenzofuran	25,300		10,200	20,500		123 #	50-111	1.75	30
2,4-Dinitrotoluene	22,600		10,200	20,500		110	44-125	32.6 #	20
Fluorene	31,300		4,100	20,500	3,850	134 #	51-116	1.23	30
Diethyl phthalate	21,000		10,200	20,500		103	51-136	6.43	30
4-Chlorophenyl phenyl ether	22,700		10,200	20,500		111	48-119	2.89	30



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**Semivolatiles by EPA Method 8270 - GC/MS - Quality Control**

**Batch: B4H1904**

**Sample Type: Solid**

**Matrix Spike Dup (B4H1904-MSD1)**

**Source: 1408010-07**

Prepared: 8/21/2014 Analyzed: 8/25/2014

**Targets (Continued)**

ANALYTE	Result µg/kg dry	Analyte Reporting Qualifiers Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
4-Nitroaniline	24,200	16,400	20,500		118	62-140	8.91	30
4,6-Dinitro-2-methylphenol	16,300	41,000	20,500		79.8	10-130	8.74	30
N-Nitrosodiphenylamine	30,700	10,200	20,500		150 #	56-120	2.04	30
4-Bromophenyl phenyl ether	24,400	10,200	20,500		119 #	55-116	4.32	30
Hexachlorobenzene	21,500	10,200	20,500		105	55-116	2.27	30
Atrazine	40,800	10,200	20,500		199 #	63-133	2.22	30
Pentachlorophenol	17,000	10,200	20,500		83.2	16-134	5.21	35
Phenanthrene	27,600	4,100	20,500	5,420	108	52-121	1.56	30
Anthracene	21,800	4,100	20,500	1,140	101	53-123	1.83	30
Carbazole	22,600	10,200	20,500		110	61-133	4.93	30
Di-n-butyl phthalate	22,400	10,200	20,500		109	51-148	0.22	30
Fluoranthene	23,800	4,100	20,500		116	60-130	0.23	30
Pyrene	25,200	4,100	20,500	4,600	101	42-138	1.82	32
Butyl benzyl phthalate	23,500	10,200	20,500		115	59-140	0.35	30
Benzo (a) anthracene	22,400	10,200	20,500	423	107	58-129	1.44	30
3,3'-Dichlorobenzidine	30,000	10,200	20,500		147	54-148	3.18	30
Chrysene	21,500	10,200	20,500	964	100	58-128	0.66	30
Bis(2-ethylhexyl)phthalate	22,900	10,200	20,500	840	108	56-153	1.71	30
Di-n-octyl phthalate	24,500	10,200	20,500		120	61-138	4.46	30
Benzo (b) fluoranthene	21,200	10,200	20,500		104	65-126	3.69	30
Benzo (k) fluoranthene	20,400	10,200	20,500		99.7	59-135	0.20	30
Benzo (a) pyrene	22,200	10,200	20,500		108	69-125	3.01	30
Indeno (1,2,3-cd) pyrene	22,500	10,200	20,500		110	62-133	1.99	30
Dibenz (a,h) anthracene	22,800	10,200	20,500		111	62-135	3.00	30
Benzo (g,h,i) perylene	20,600	10,200	20,500		100	50-137	1.61	30



**Environmental Protection Agency**  
**Region 6 Laboratory**

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**TCLP Semivolatiles by EPA Method 1311/8270 - GC/MS - Quality Control**

**Batch: B4H2606**

**Sample Type: Liquid**

**Blank (B4H2606-BLK1)**

Prepared: 8/27/2014 Analyzed: 8/28/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC	%REC Limits
<i>2-Fluorophenol</i>	52.3		75.0	69.8	42-109
<i>Phenol-d5</i>	53.2		75.0	70.9	46-110
<i>2-Chlorophenol-d4</i>	54.8		75.0	73.0	47-103
<i>1,2-Dichlorobenzene-d4</i>	26.5		50.0	53.1	33-100
<i>Nitrobenzene-d5</i>	35.6		50.0	71.1	42-126
<i>2-Fluorobiphenyl</i>	31.9		50.0	63.8	50-104
<i>2,4,6-Tribromophenol</i>	63.1		75.0	84.2	59-142

**Blank (B4H2606-BLK1)**

Prepared: 8/27/2014 Analyzed: 8/28/2014

**Targets**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers	Limit
1,4-Dichlorobenzene	U		5.0
2,4-Dinitrotoluene	U		5.0
Hexachlorobenzene	U		5.0
Hexachlorobutadiene	U		5.0
Hexachloroethane	U		5.0
2-Methylphenol	U		5.0
3 &/or 4-Methylphenol	U		5.0
Nitrobenzene	U		5.0
Pentachlorophenol	U		5.0
Pyridine	U		5.0
2,4,5-Trichlorophenol	U		5.0
2,4,6-Trichlorophenol	U		5.0



Environmental Protection Agency  
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**TCLP Semivolatiles by EPA Method 1311/8270 - GC/MS - Quality Control**

Batch: B4H2606

Sample Type: Liquid

**Blank (B4H2606-BLK2)**

Prepared: 8/27/2014 Analyzed: 8/28/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>2-Fluorophenol</i>	579		750	77.2	42-109
<i>Phenol-d5</i>	590		750	78.6	46-110
<i>2-Chlorophenol-d4</i>	604		750	80.5	47-103
<i>1,2-Dichlorobenzene-d4</i>	296		500	59.2	33-100
<i>Nitrobenzene-d5</i>	403		500	80.5	42-126
<i>2-Fluorobiphenyl</i>	359		500	71.8	50-104
<i>2,4,6-Tribromophenol</i>	750		750	100	59-142

**Blank (B4H2606-BLK2)**

Prepared: 8/27/2014 Analyzed: 8/28/2014

**Targets**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers	Limit
1,4-Dichlorobenzene	U		50.0
2,4-Dinitrotoluene	U		50.0
Hexachlorobenzene	U		50.0
Hexachlorobutadiene	U		50.0
Hexachloroethane	U		50.0
2-Methylphenol	U		50.0
3 &/or 4-Methylphenol	U		50.0
Nitrobenzene	U		50.0
Pentachlorophenol	U		50.0
Pyridine	U		50.0
2,4,5-Trichlorophenol	U		50.0
2,4,6-Trichlorophenol	U		50.0



**Environmental Protection Agency**  
**Region 6 Laboratory**

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**TCLP Semivolatiles by EPA Method 1311/8270 - GC/MS - Quality Control**

**Batch: B4H2606**

**Sample Type: Liquid**

**LCS (B4H2606-BS1)**

Prepared: 8/27/2014 Analyzed: 8/28/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>2-Fluorophenol</i>	60.4		75.0	80.6	42-109
<i>Phenol-d5</i>	66.7		75.0	88.9	46-110
<i>2-Chlorophenol-d4</i>	65.2		75.0	87.0	47-103
<i>1,2-Dichlorobenzene-d4</i>	30.6		50.0	61.3	33-100
<i>Nitrobenzene-d5</i>	37.0		50.0	73.9	42-126
<i>2-Fluorobiphenyl</i>	36.6		50.0	73.2	50-104
<i>2,4,6-Tribromophenol</i>	84.1		75.0	112	59-142

**LCS (B4H2606-BS1)**

Prepared: 8/27/2014 Analyzed: 8/28/2014

**Targets**

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	%REC %REC	%REC Limits
1,4-Dichlorobenzene	36.4		5.0	50.0	72.8	35-100
2,4-Dinitrotoluene	54.8		5.0	50.0	110	59-120
Hexachlorobenzene	48.0		5.0	50.0	95.9	76-114
Hexachlorobutadiene	42.4		5.0	50.0	84.9	25-115
Hexachloroethane	36.8		5.0	50.0	73.6	16-103
2-Methylphenol	46.3		5.0	50.0	92.6	66-124
3 &/or 4-Methylphenol	47.6		5.0	50.0	95.3	66-125
Nitrobenzene	40.0		5.0	50.0	80.0	76-114
Pentachlorophenol	50.4		5.0	50.0	101	46-133
Pyridine	29.7		5.0	50.0	59.4#	70-130
2,4,5-Trichlorophenol	57.5		5.0	50.0	115	78-116
2,4,6-Trichlorophenol	55.0		5.0	50.0	110	77-115



Environmental Protection Agency  
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**TCLP Semivolatiles by EPA Method 1311/8270 - GC/MS - Quality Control**

Batch: B4H2606

Sample Type: Liquid

**Matrix Spike (B4H2606-MS1)**

Source: 1408010-07

Prepared: 8/27/2014 Analyzed: 8/28/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
2-Fluorophenol	556		750	74.2	42-109
Phenol-d5	655		750	87.3	46-110
2-Chlorophenol-d4	609		750	81.1	47-103
1,2-Dichlorobenzene-d4	315		500	63.1	33-100
Nitrobenzene-d5	386		500	77.3	42-126
2-Fluorobiphenyl	386		500	77.1	50-104
2,4,6-Tribromophenol	875		750	117	59-142

**Matrix Spike (B4H2606-MS1)**

Source: 1408010-07

Prepared: 8/27/2014 Analyzed: 8/28/2014

**Targets**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers Limit	Spike Level	Source Result	%REC %REC	%REC Limits
1,4-Dichlorobenzene	366	50.0	500		73.3	34-100
2,4-Dinitrotoluene	554	50.0	500		111	57-123
Hexachlorobenzene	482	50.0	500		96.5	67-121
Hexachlorobutadiene	401	50.0	500		80.2	29-112
Hexachloroethane	373	50.0	500		74.7	24-100
2-Methylphenol	496	50.0	500	5.6	98.2	60-131
3 &/or 4-Methylphenol	506	50.0	500	7.6	99.7	57-136
Nitrobenzene	416	50.0	500		83.2	68-126
Pentachlorophenol	571	50.0	500		114	55-146
Pyridine	325	50.0	500		65.0#	70-130
2,4,5-Trichlorophenol	600	50.0	500		120	68-127
2,4,6-Trichlorophenol	573	50.0	500		115	65-128



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**Region 6 Laboratory**

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**TCLP Semivolatiles by EPA Method 1311/8270 - GC/MS - Quality Control**

**Batch: B4H2606**

**Sample Type: Liquid**

**Matrix Spike Dup (B4H2606-MSD1)**

**Source: 1408010-07**

Prepared: 8/27/2014 Analyzed: 8/28/2014

**Surrogates**

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC %REC	%REC Limits
<i>2-Fluorophenol</i>	602		750	80.3	42-109
<i>Phenol-d5</i>	724		750	96.5	46-110
<i>2-Chlorophenol-d4</i>	659		750	87.9	47-103
<i>1,2-Dichlorobenzene-d4</i>	322		500	64.4	33-100
<i>Nitrobenzene-d5</i>	386		500	77.2	42-126
<i>2-Fluorobiphenyl</i>	368		500	73.6	50-104
<i>2,4,6-Tribromophenol</i>	881		750	117	59-142

**Matrix Spike Dup (B4H2606-MSD1)**

**Source: 1408010-07**

Prepared: 8/27/2014 Analyzed: 8/28/2014

**Targets**

ANALYTE	Result µg/L	Analyte Reporting Qualifiers Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
1,4-Dichlorobenzene	365	50.0	500		73.0	34-100	0.43	32
2,4-Dinitrotoluene	563	50.0	500		113	57-123	1.62	16
Hexachlorobenzene	481	50.0	500		96.2	67-121	0.33	30
Hexachlorobutadiene	399	50.0	500		79.8	29-112	0.62	30
Hexachloroethane	384	50.0	500		76.8	24-100	2.85	30
2-Methylphenol	547	50.0	500	5.6	108	60-131	9.74	30
3 &/or 4-Methylphenol	560	50.0	500	7.6	110	57-136	10.1	30
Nitrobenzene	415	50.0	500		83.0	68-126	0.27	30
Pentachlorophenol	580	50.0	500		116	55-146	1.65	21
Pyridine	332	50.0	500		66.3#	70-130	2.07	30
2,4,5-Trichlorophenol	606	50.0	500		121	68-127	1.06	30
2,4,6-Trichlorophenol	573	50.0	500		115	65-128	0.05	30



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**Metals by EPA Method 6010 - ICP - Quality Control**

**Batch: B4H2702**

**Sample Type: Solid**

**Blank (B4H2702-BLK1)**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets**

ANALYTE	Result mg/Kg wet	Analyte Qualifiers	Reporting Limit
Aluminum	U		10.0
Barium	U		1.0
Beryllium	U		0.5
Cadmium	U		0.5
Calcium	40.3		15.0
Chromium	U		1.0
Cobalt	U		2.0
Copper	U		2.0
Iron	7.5		2.5
Magnesium	U		15.0
Manganese	0.5		0.5
Nickel	U		2.0
Potassium	U		100
Silver	U		1.0
Sodium	U		50.0
Vanadium	U		2.0
Zinc	U		2.0

**LCS (B4H2702-BS1)**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets**

ANALYTE	Result mg/Kg wet	Analyte Qualifiers	Reporting Limit	Spike Level	%REC Limits
Aluminum	92.0		10.0	100	92.0 75-125
Barium	178		1.0	200	89.1 75-125
Beryllium	4.7		0.5	5.00	93.5 75-125
Cadmium	4.5		0.5	5.00	90.8 75-125
Calcium	8,980		15.0	10,000	89.8 75-125
Chromium	36.9		1.0	40.0	92.3 75-125



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**Metals by EPA Method 6010 - ICP - Quality Control**

**Batch: B4H2702**

**Sample Type: Solid**

**LCS (B4H2702-BS1)**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets (Continued)**

ANALYTE	Result mg/Kg wet	Analyte Qualifiers	Reporting Limit	Spike Level	%REC	%REC Limits
Cobalt	17.3		2.0	20.0	86.3	75-125
Copper	36.9		2.0	40.0	92.2	75-125
Iron	91.9		2.5	100	91.9	75-125
Magnesium	9,510		15.0	10,000	95.1	75-125
Manganese	36.0		0.5	40.0	90.1	75-125
Nickel	34.2		2.0	40.0	85.4	75-125
Potassium	9,310		100	10,000	93.1	75-125
Silver	4.2		1.0	5.00	84.8	75-125
Sodium	9,510		50.0	10,000	95.1	75-125
Vanadium	38.1		2.0	40.0	95.3	75-125
Zinc	88.2		2.0	100	88.2	75-125

**Matrix Spike (B4H2702-MS1)**

**Source: 1408010-07**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets**

ANALYTE	Result mg/Kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits
Aluminum	12,600		12.1	121	8,160	NR #	75-125
Barium	761		1.2	242	558	83.7	75-125
Beryllium	6.4		0.6	6.06	0.6	95.4	75-125
Cadmium	5.5		0.6	6.06	0.7	78.5	75-125
Calcium	27,700		18.2	12,100	30,800	NR #	75-125
Chromium	52.0		1.2	48.5	6.3	94.3	75-125
Cobalt	24.1		2.4	24.2	3.4	85.4	75-125
Copper	53.4		2.4	48.5	15.8	77.6	75-125
Iron	5,550		3.0	121	15,700	NR #	75-125
Magnesium	15,200		18.2	12,100	2,660	104	75-125
Manganese	377		0.6	48.5	443	NR #	75-125
Nickel	47.7		2.4	48.5	6.6	84.8	75-125



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**Metals by EPA Method 6010 - ICP - Quality Control**

**Batch: B4H2702**

**Sample Type: Solid**

**Matrix Spike (B4H2702-MS1)**

**Source: 1408010-07**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets (Continued)**

ANALYTE	Result mg/Kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits
Potassium	12,800		121	12,100	1,100	96.9	75-125
Silver	4.8		1.2	6.06		79.2	75-125
Sodium	13,800		60.6	12,100	1,780	99.2	75-125
Vanadium	59.4		2.4	48.5	14.1	93.5	75-125
Zinc	152		2.4	121	262	NR #	75-125

**Matrix Spike Dup (B4H2702-MSD1)**

**Source: 1408010-07**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets**

ANALYTE	Result mg/Kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
Aluminum	12,600		12.3	123	8,160	NR #	75-125	0.36	20
Barium	746		1.2	246	558	76.3	75-125	2.00	20
Beryllium	6.4		0.6	6.16	0.6	94.5	75-125	0.60	20
Cadmium	5.4		0.6	6.16	0.7	76.6	75-125	0.85	20
Calcium	48,000		18.5	12,300	30,800	140 #	75-125	53.6 #	20
Chromium	51.5		1.2	49.2	6.3	91.8	75-125	0.95	20
Cobalt	24.2		2.5	24.6	3.4	84.4	75-125	0.33	20
Copper	54.7		2.5	49.2	15.8	79.2	75-125	2.54	20
Iron	6,020		3.1	123	15,700	NR #	75-125	8.08	20
Magnesium	15,500		18.5	12,300	2,660	104	75-125	1.94	20
Manganese	489		0.6	49.2	443	93.5	75-125	25.8 #	20
Nickel	47.4		2.5	49.2	6.6	82.9	75-125	0.61	20
Potassium	13,000		123	12,300	1,100	96.6	75-125	1.11	20
Silver	4.9		1.2	6.16		80.0	75-125	2.49	20
Sodium	13,700		61.6	12,300	1,780	97.0	75-125	0.58	20
Vanadium	60.4		2.5	49.2	14.1	94.0	75-125	1.55	20
Zinc	145		2.5	123	262	NR #	75-125	4.44	20



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**Metals by EPA Method 6010 - ICP - Quality Control**

**Batch: B4H2702**

**Sample Type: Solid**

**Reference (B4H2702-SRM1)**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets**

ANALYTE	Result	Analyte Reporting	Spike	Source	%REC	RPD
	mg/Kg wet	Qualifiers	Level	Result	%REC Limits	RPD Limit
Aluminum	104	9.6	115		90.4 47.6-152.2	
Barium	3.0	1.0	1.60		186 #62.5-137.5	
Beryllium	4.8	0.5	4.90		98.1 61.2-138.7	
Cadmium	9.7	0.5	10.9		89.4 70.6-128.4	
Calcium	46,500	14.4	44,200		105 68.6-131.7	
Chromium	25.8	1.0	27.1		95.1 68.3-131.7	
Cobalt	27.6	1.9	37.4		73.9 64.7-135.3	
Copper	1,640	1.9	1,770		92.5 74.6-126	
Iron	4,420	2.4	6,470		68.4 66.2-133.8	
Magnesium	30,400	14.4	29,200		104 70.2-129.8	
Manganese	60.3	0.5	61.0		98.9 68.2-132	
Nickel	11.1	1.9	16.3		67.9 55.2-145.4	
Potassium	55.7	95.8	39.7		140 0-215	
Silver	5.2	1.0	5.90		88.2 45.8-154.2	
Sodium	33.3	47.9	72.5		46.0 0-298	
Vanadium	17.1	1.9	17.6		96.9 65.9-134.6	
Zinc	28.3	1.9	47.5		59.6 43.2-156.6	



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**TCLP Metals by EPA Method 1311/6010-ICP - Quality Control**

Batch: B4H2704

Sample Type: Liquid

**Blank (B4H2704-BLK1)**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets**

ANALYTE	Result mg/L	Analyte Reporting Qualifiers	Limit
Arsenic	U		0.10
Barium	U		0.01
Cadmium	U		0.005
Chromium	U		0.01
Lead	U		0.03
Selenium	U		0.10
Silver	U		0.01

**Blank (B4H2704-BLK2)**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets**

ANALYTE	Result mg/L	Analyte Reporting Qualifiers	Limit
Arsenic	U		0.40
Barium	0.09		0.04
Cadmium	U		0.02
Chromium	U		0.04
Lead	U		0.12
Selenium	U		0.40
Silver	U		0.04

**LCS (B4H2704-BS1)**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets**

ANALYTE	Result mg/L	Analyte Reporting Qualifiers	Limit	Spike Level	%REC Limits
Arsenic	3.77		0.10	4.00	94.2 75-125
Barium	3.32		0.01	4.00	83.1 75-125



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**Region 6 Laboratory**

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**TCLP Metals by EPA Method 1311/6010-ICP - Quality Control**

**Batch: B4H2704**

**Sample Type: Liquid**

**LCS (B4H2704-BS1)**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets (Continued)**

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	%REC %REC	Limit Limits
Cadmium	0.08		0.005	0.100	83.2	75-125
Chromium	0.68		0.01	0.800	85.5	75-125
Lead	0.64		0.03	0.800	80.6	75-125
Selenium	1.83		0.10	2.00	91.4	75-125
Silver	0.08		0.01	0.100	83.0	75-125

**Matrix Spike (B4H2704-MS1)**

**Source: 1408010-01**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets**

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	Limit Limits
Arsenic	3.95		0.40	4.00		98.8	75-125
Barium	3.91		0.04	4.00	0.31	90.0	75-125
Cadmium	0.09		0.02	0.100	4.36E-4	91.2	75-125
Chromium	0.74		0.04	0.800		92.8	75-125
Lead	0.70		0.12	0.800	0.002	87.8	75-125
Selenium	0.34		0.40	2.00		17.0#	75-125
Silver	0.08		0.04	0.100	4.55E-4	84.1	75-125

**Matrix Spike Dup (B4H2704-MSD1)**

**Source: 1408010-01**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets**

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	Limit Limits	RPD RPD Limit
Arsenic	3.85		0.40	4.00		96.2	75-125	2.70 20
Barium	3.79		0.04	4.00	0.31	87.0	75-125	3.10 20
Cadmium	0.09		0.02	0.100	4.36E-4	90.7	75-125	0.52 20
Chromium	0.73		0.04	0.800		91.8	75-125	1.07 20



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**TCLP Metals by EPA Method 1311/6010-ICP - Quality Control**

**Batch: B4H2704**

**Sample Type: Liquid**

**Matrix Spike Dup (B4H2704-MSD1)**

**Source: 1408010-01**

Prepared: 8/26/2014 Analyzed: 9/11/2014

**Targets (Continued)**

ANALYTE	Result mg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
Lead	0.71		0.12	0.800	0.002	88.7	75-125	1.02	20
Selenium	0.36		0.40	2.00		17.9#	75-125	4.93	20
Silver	0.08		0.04	0.100	4.55E-4	82.9	75-125	1.43	20



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**Metals by EPA Method 6020 - ICP MS - Quality Control**

**Batch: B4H2703**

**Sample Type: Solid**

**Blank (B4H2703-BLK1)**

Prepared: 8/26/2014 Analyzed: 8/29/2014

**Targets**

ANALYTE	Result mg/Kg wet	Analyte Qualifiers	Reporting Limit
Antimony	U		0.5
Arsenic	U		0.5
Lead	U		0.5
Selenium	U		1.0
Thallium	U		0.5

**LCS (B4H2703-BS1)**

Prepared: 8/26/2014 Analyzed: 8/29/2014

**Targets**

ANALYTE	Result mg/Kg wet	Analyte Qualifiers	Reporting Limit	Spike Level	%REC Limits
Antimony	20.1		0.5	20.0	101 85-115
Arsenic	21.0		0.5	20.0	105 85-115
Lead	20.8		0.5	20.0	104 85-115
Selenium	20.7		1.0	20.0	103 85-115
Thallium	20.4		0.5	20.0	102 85-115

**Matrix Spike (B4H2703-MS1)**

**Source: 1408010-07**

Prepared: 8/26/2014 Analyzed: 8/29/2014

**Targets**

ANALYTE	Result mg/Kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC Limits
Antimony	3.6		0.6	23.8	0.07	14.8# 75-125
Arsenic	25.0		0.6	23.8	2.1	96.2 75-125
Lead	51.8		0.6	23.8	25.8	109 75-125
Selenium	19.9		1.2	23.8	0.6	80.9 75-125
Thallium	23.5		0.6	23.8	0.2	98.0 75-125



**Environmental Protection Agency  
Region 6 Laboratory**

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**Metals by EPA Method 6020 - ICP MS - Quality Control**

**Batch: B4H2703**

**Sample Type: Solid**

**Matrix Spike Dup (B4H2703-MSD1)**

**Source: 1408010-07**

Prepared: 8/26/2014 Analyzed: 8/29/2014

**Targets**

ANALYTE	Result mg/Kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
Antimony	4.1		0.6	23.2	0.07	17.5#	75-125	14.1	20
Arsenic	24.0		0.6	23.2	2.1	94.4	75-125	3.89	20
Lead	47.0		0.6	23.2	25.8	91.3	75-125	9.62	20
Selenium	19.5		1.2	23.2	0.6	80.9	75-125	2.14	20
Thallium	22.5		0.6	23.2	0.2	96.0	75-125	4.37	20

**Reference (B4H2703-SRM1)**

Prepared: 8/26/2014 Analyzed: 8/29/2014

**Targets**

ANALYTE	Result mg/Kg wet	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC %REC	%REC Limits	RPD RPD	RPD Limit
Antimony	54.0		2.4	66.0		81.8	41.8-157.6		
Arsenic	187		2.4	253		74.1	60.8-139		
Lead	58.6		2.4	56.9		103	72.7-127.2		
Selenium	8.1		4.8	10.0		81.1	41-159		
Thallium	11.0		2.4	9.50		116	30.5-169.5		



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**SURROGATE SUMMARY REPORT**

**VOA 8260 Routine List**

**Liquid**

LAB NUMBER	1,2-DCE-d4	TOL-d8	4-BFB
1408010-01	105	105	100
1408010-02	100	98.4	94.2
1408010-03	107	103	99.4
1408010-04	96.8	94.0	89.3
1408010-05	105	100	95.4
1408010-06	110	105	101
B4I0203-BLK1	102	97.8	93.3
B4I0203-BS1	108	106	101
B4I0203-MS1	101	100	95.9
B4I0203-MSD1	101	101	97.6

QC LIMITS

1,2-DCE-d4	=	1,2-Dichloroethane-d4	86 - 117
TOL-d8	=	Toluene-d8	85 - 113
4-BFB	=	4-Bromofluorobenzene	73 - 115

**Solid**

LAB NUMBER	1,2-DCE-d4	TOL-d8	4-BFB
1408010-07	105	97.0	100
1408010-08	103	97.2	101
B4I0204-BLK1	106	99.2	98.4
B4I0204-BS1	101	98.6	98.1
B4I0204-MS1	96.3	95.4	96.1
B4I0204-MSD1	102	99.3	109

QC LIMITS

1,2-DCE-d4	=	1,2-Dichloroethane-d4	85 - 117
TOL-d8	=	Toluene-d8	87 - 106
4-BFB	=	4-Bromofluorobenzene	86 - 114

**VOA TCLP 1311/8260**

**Liquid**

LAB NUMBER	1,2-DCE-d4	TOL-d8	4-BFB
1408010-03	101	102	97.5



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**SURROGATE SUMMARY REPORT**

**VOA TCLP 1311/8260**

**Liquid**

LAB NUMBER	1,2-DCE-d4	TOL-d8	4-BFB
B4I0202-BLK1	100	104	97.6
B4I0202-BS1	98.1	99.6	96.0
B4I0202-MS1	98.6	101	97.6
B4I0202-MSD1	98.8	102	98.3

QC LIMITS

1,2-DCE-d4	=	1,2-Dichloroethane-d4	86 - 117
TOL-d8	=	Toluene-d8	85 - 113
4-BFB	=	4-Bromofluorobenzene	73 - 115



ENVIRONMENTAL PROTECTION AGENCY  
OFFICIAL  
CHAIN OF CUSTODY RECORD

2 COOLS UNDER

PROJ. NO.		PROJECT NAME				NO. OF CONTAINERS	ANALYSIS					MATRIX	TAG NUMBERS	REMARKS
WESTERN - GULF REFINERY EPA ID: NM00033211		SAMPLERS: (Signature) PAUL JAMES BIL MANSFIELD CHUCK FAGNER					VOC (TOTAL) W/ H <sub>2</sub>	VOC (CALC)	SEMI-VOC (TOTAL)	SEMI-VOC (CALC)	TRIF METALS			
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION									
01	8/14/14	10:50		X	PT-1	8	X	X	X	X	X	WATER	6-43890 THROUGH 6-43897	
<del>02</del>	<del>8/14/14</del>	<del>10:50</del>	<del></del>	<del>X</del>	<del>PT-1-D</del> PT-3	<del>8</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>WATER</del>	<del>6-40100 THROUGH 6-40107</del>	
03	8/14/14	10:50		X	PT-1M5	8	X	X	X	X	X	WATER	6-43896 THROUGH 6-438923	
04	8/14/14	10:50		X	PT-1MSD	8	X	X	X	X	X	WATER	6-40116 THROUGH 6-40123	
05	8/14/14	11:20		X	PT-2	8	X	X	X	X	X	WATER	6-40108 THROUGH 6-40115	
<del>06</del>	<del>8/14/14</del>	<del>10:50</del>	<del></del>	<del>X</del>	<del>PT-3</del> PT-1D	<del>8</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>WATER</del>	<del>6-43898 THROUGH 6-438915</del>	
07	8/14/14	N/A		X	TB-2	3	X					WATER	6-438924 THROUGH 6-438926	
08	8/14/14	N/A		X	TB-3	3	X					NATR	6-401046, 6-401012, 6-401013	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
(Signature)	8/14/14 11:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
		(Signature)	8/14/14 4:55	VOC = EPA METHOD 8260 SEMI-VOC = EPA METHOD 8210 METALS = EPA METHOD 6010/6020	
Shipped by: UPS	Airbill Number: 1ZA 46 R22.01 4726 8809				

EPA 7500-53  
(11/96)

Distribution: White Accompanyes Shipment; Pink to Coordinator Field Files;  
Green to Report; Yellow Returns with Warrant

Temp/Dunk

6-08245

Environmental Protection Agency  
**Region 6 Laboratory**  
10625 Fallstone Road, Houston, TX 77099  
Phone: (281) 983-2100 Fax: (281) 983-2248



# Environmental Protection Agency Region 6 Laboratory

10625 Fallstone Road, Houston, TX 77099  
Phone: (281)983-2100 Fax: (281)983-2248

ENVIRONMENTAL PROTECTION AGENCY  
**OFFICIAL**  
CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS		REMARKS	
WESTERN-GALLUP REFINERY		EPA ID: NMD00033211					
SAMPLERS (Signature): Paul James, Bill Mayfield, Chuck Roenigk		STATION LOCATION					
STA. NO.	DATE	TIME	COMP.	GRAM	NO.	OF CONTAINERS	REMARKS
01	8/14/10		X	PRE-API	9		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
02	8/14/10		X	PRE-API-1	9		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
03	8/14/10		X	PRE-API-MS	9		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
04	8/14/10		X	PRE-API-MSD	9		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
05	8/14/10		X	POST-MPPE	9		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
06	8/14/10		X	POST-CARBON	9		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
07	8/14/10		X	SEEP	11		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
08	8/14/10		X	SEEP-1	11		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
09	8/14/10		X	SEEP-MS	11		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
10	8/14/10		X	SEEP-MSD	11		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
11	8/14/10		X	TR-1	3		VOC TSP (M) X SEM-VOC TSP X METALS TSP X METALS TSP (M) X
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6-08246

Temp 61.91k = 3.0

Distribution: White Accompanies Shipment, Pink to Coordinator Field File  
Green to Report, Yellow Returns with Warrant.

Remarks:  
VOC = 8200 EPA METHOD.  
SEM-VOC = 8210 EPA METHOD.  
METALS = 6010/6020 EPA METHOD

Shipped by: JPS  
Date / Time: 8/14/10 16:00  
Received for Laboratory by: [Signature]  
Date / Time: 8/15/10 19:55  
Retrieved by: [Signature]  
Date / Time: 8/16/10 16:00  
Retrieved by: [Signature]  
Date / Time: 8/16/10 16:00  
Retrieved by: [Signature]



ENVIRONMENTAL PROTECTION AGENCY  
OFFICIAL  
CHAIN OF CUSTODY RECORD

*2 COOLS UNDER*

PROJ. NO.		PROJECT NAME				NO. OF CONTAINERS	ANALYSIS					MATRIX	TAG NUMBERS	REMARKS
WESTERN - GULF REFINERY EPA ID: NM000333211		SAMPLERS: (Signature) PAUL JAMES BILL MANFIELD CHUCK BARNES					VOC (TOTAL) w/ MET	VOC (TELP)	SEMI-VOC (TELP)	SEMI-VOC (TOTAL)	TRAP METALS			
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION									
01	8/14/05	10:50	X		PT-1	8	X	X	X	X	X	WATER	6-43890 THROUGH 6-43891	
<del>02</del>	<del>8/14/05</del>	<del>10:55</del>	<del>X</del>		<del>PT-1D</del> <del>PT-3</del>	<del>8</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>WATER</del>	<del>6-40110 THROUGH 6-40111</del>	
03	8/14/05	10:55	X		PT-1MS	8	X	X	X	X	X	WATER	6-43896 THROUGH 6-43897	
04	8/14/05	10:30	X		PT-1MSD	8	X	X	X	X	X	WATER	6-40116 THROUGH 6-40117	
05	8/14/05	11:20	X		PT-2	8	X	X	X	X	X	WATER	6-40108 THROUGH 6-40115	
<del>06</del>	<del>8/14/05</del>	<del>10:35</del>	<del>X</del>		<del>PT-3</del> <del>PT-1D</del>	<del>8</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>WATER</del>	<del>6-43890 THROUGH 6-43891</del>	
07	8/14/05	NA	X		TB-2	3	X					WATER	6-43892 THROUGH 6-43893	
08	8/14/05	NA	X		TB-3	3	X					WATER	6-40104, 6-40107, 6-40108	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<i>[Signature]</i>	8/14/05				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks	
			8/14/05	VOC = EPA METHOD 8260 SEMI-VOL = EPA METHOD 8210 METALS = EPA METHOD 6010/6020	
Shipped by: UPS	Airbill Number: 1ZA 46 R22 01 9166 8809				

EPA 7500-53  
(11/96)

Distribution: White Accompanies Shipment; Pink to Coordinator Field File;  
Green to Report; Yellow Returns with Warrant.

*Temp 0/21C = 30*

6-08245

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### Notes and Definitions

The units for surrogates on VOA solid samples are reported in µg/L instead of the expected µg/Kg for a solid sample. The difference is because the surrogate spiking procedure is a post sample preparation addition, and the units are based on the concentration of the surrogate in the diluted extract, not the solid sample.

- UJ The analyte was not detected at or above the reported value. The reported value is an estimate.
- RL The reporting limit for this analyte was raised because absence or presence at the routine or lower value could not be verified.
- N There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification.
- K The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
- J The identification of the analyte is acceptable; the reported value is an estimate.
- A This sample was extracted at a single acid pH.
- HTS Sample was prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.
- ABN Acid Base Neutrals (Semivolatile Compounds)
- AES Atomic Emission Spectrometer
- BS Blank Spike
- CVAA Cold Vapor Atomic Absorption
- DCB Decachlorobiphenyl
- ECD Electron Capture Detector
- GC Gas Chromatograph
- ICP Inductively Coupled Plasma
- ISTD Internal Standard
- LCS Laboratory Control Sample
- MS Mass Spectrometer
- MS/MSD Matrix Spike/Matrix Spike Duplicate
- NA Not Applicable
- NPD Nitrogen Phosphorous Detector



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NR	Not Reported
PCB	Polychlorinatedbiphenyl
RL	Reporting Limit
RT	Retention Time
TCLP	Toxicity Characteristic Leaching Procedure
TCMX	Tetrachloro-meta-xylene
U	Undetected
VOA	Volatile Organic Analysis
#	Out of QC limits

Initial pressure in air analyses is the pressure at which the canister was received in psia (pounds *per* square inch absolute pressure).

The pH reported for Volatile liquid samples was tested using a 0-14 pH indicator strip for the purpose of verifying chemical preservation.

The statistical software used for the reporting of toxicity data is ToxCalc 5.0.32, Environmental Toxicity Data Analysis System 1994-2007 Tidepool Scientific Software.



**Region 6 Compliance Assurance and Enforcement Division  
INSPECTION REPORT**

**Appendix 7**

**Correspondences between EPA and  
Western concerning the Inspection**

Due to its large file size, the contents of this appendix was not included in this transmittal.

**Region 6 Compliance Assurance and Enforcement Division  
INSPECTION REPORT**

## Appendix 8

### Information on the Seep Area

Due to its large file size, the contents of this appendix was not included in this transmittal.

## Cobrain, Dave, NMENV

---

**Subject:** FW: Post Inspection Phone Call  
**Location:** Via Phone

**Start:** Mon 10/27/2014 9:30 AM  
**End:** Mon 10/27/2014 10:00 AM  
**Show Time As:** Tentative

**Recurrence:** (none)

**Meeting Status:** Not yet responded

**Organizer:** James, Paul

-----Original Appointment-----

**From:** James, Paul [<mailto:James.Paul@epa.gov>]

**Sent:** Friday, October 24, 2014 9:51 AM

**To:** James, Paul; VanHorn, Kristen, NMENV

**Cc:** Dougherty, Joel

**Subject:** Post Inspection Phone Call

**When:** Monday, October 27, 2014 10:30 AM-11:00 AM (UTC-06:00) Central Time (US & Canada).

**Where:** Via Phone

**Sensitivity:** Private

Hi Kristen-

Does this time work for you and David (9:30 your time)?

Meanwhile, here are some of my concerns:

### Regulatory Compliance Concerns

1. The facility states that the WWTP is exempted from RCRA under the Wastewater Treatment Unit Exemption, aka "Headworks Exemption," 40 CFR § 261.3(a)(2)(iv)(A-G). If this is the case, the units within the WWTP is part of a wastewater treatment facility that is subject to regulation under either Section 402 or Section 307(b) of the Clean Water Act (CWA). Since the WWTP does not and had not discharge into surface waters (waters of the U.S.) or into a Publicly Owned Treatment Works (POTW) sewer system, it is believe that the WWTP does not receive the exemption, and therefore its units fall under RCRA regulations (Part 264/265, Subpart J). If this is the argument holds true, many infringements are likely at play, including the following concerns:
2. Inadequate secondary containment around hazardous waste tanks, 40 CFR § 265.193. It was noted during the preparation of this inspection that a release of hazardous waste water (D018, F038) from the API overflow tanks occurred on August 5, 2014, in which the release flowed approximately 0.5 miles. A C-141 Initial Report was provided to NMED as a result of this release. During my inspection, the secondary containment was still inadequate.
3. No secondary containment around Granular Activated Carbon (GAC) canisters, 40 CFR § 265.193 and § 265.31.
4. Inadequate secondary containment around filter press and roll off box, 40 CFR § 265.193 and 265.31; and
5. Inadequate labeling of hazardous waste tanks. While being accumulated on-site, each container and tank must be labeled or marked clearly with the words "Hazardous Waste," 40 CFR § 262.34(a)(3).
6. In the 90-day hazardous waste storage area, a drum containing iron chelate hazardous waste was leaking onto the ground. The failure to identify the leaking container, and containers that are deteriorating (e.g., cracked, rusted) or leaking must not be used. Waste stored in defective containers must be transferred to containers in

good condition or handled in another way that satisfies the requirements in Part 264/265 (40 CFR § 265.171 and § 265.31).

7. Twelve (12) 55-gallon drum hazardous waste containers were identified in the 90-day hazardous waste storage area that exceeded the 90 day accumulation time as defined under 40 CFR § 262.34.
8. Inadequate aisle space in the 90-day hazardous waste storage area. Under 40 CFR § 265.35, the owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.
9. During the facility tour, I noted areas that hazardous waste has leaked or has a potential of leaking onto the ground. These areas include:
  10. Seep Area (recent hazardous waste release);
  11. API Overflow Tanks (recent hazardous waste release);
  12. Fire Training Area Diesel Tank (inspection team noted contamination outside secondary containment);
  13. The poor condition of the Fire Training Pad (inspection team noted numerous cracks in the containment pad);
  14. The poor condition of the Additive Tank Farm's secondary containment (inspection team noted joint compound has weathered away from the secondary containment seems); and
  15. An old abandoned underground storage tank (inspection team noted UST outside the production area with it lid open and contents inside);

Under 40 CFR § 265.31, the Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

#### Non-Regulatory Concerns

6. The 90-day hazardous waste storage area is not covered and during the monsoons, rainwater can fall, collect inside the storage area, and be discharged without knowledge or containment.
7. Multiple types of waste stored in the 90-Day Hazardous Waste Storage Area. While not against the regulation, it is not considered a safe/sound management practice.
8. The facility receives and treats sanitary sewage and storm water from an offsite facility. It is unknown what is in those waters.
9. Water well was unsecured (missing lock).

Note: Some of these concerns are being addressed, have already been addressed, or will be addressed, according to Mr. Riege email.

#### Surface Soil Samples of Seep Area

Sample SEEP and sample SEEP-1 (duplicate sample of sample SEEP) had no total concentrations that exceeded the EPA's industrial soil screening levels; but there were exceedances in residential soil screening levels for 2-Methylnaphthalene, Naphthalene, Aluminum, Cobalt, Iron, Manganese, and Arsenic. Under TCLP extraction methods, both sample, SEEP and SEEP-1, had no regulatory exceedances.

#### Waste Water Samples – Post Treatment

Sample PT-2 (Post-MPPE Wastewater Sample) had a concentration of Total Benzene at 600 µg/L. Due to the high concentration of benzene, sample PT-2 was reanalyzed with TCLP extraction methods and had a concentration of Benzene at 597 µg/L (0.597 mg/L). This sample exceeds the regulatory limit of 0.5 mg/L.

For comparison, sample PT-1 (Post-GAC wastewater sample) had a concentration of Total Benzene at 18.1 µg/L, and its duplicate sample PT-1D had a concentration of Total Benzene at 17.5 µg/L. For waste water samples, all other compounds/analytes, defined in 40 CFR 261.24, were below regulatory levels.

We can discuss this issue further on Monday.

5/3/2012

1997

Imagery Date: 5/3/2012

35°29'22.10" N, 108°25'56.01" W, elev 6923

Google

