

**GW - 001**

**REPORTS**

**2008 GW  
Remediation &  
Monitoring**

**4/8/2009**



BLOOMFIELD REFINERY

April 8, 2009

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**RE: Corrective Measures Study and Corrective Measures  
Implementation (Site Investigation and Abatement Plan)  
2008 Groundwater Remediation and Monitoring Annual Report  
Western Refining Southwest, Inc. - Bloomfield Refinery  
EPA ID# NMD089416416  
GW - 001**

Dear Hope and Brad:

Western Refining Southwest Inc. - Bloomfield Refinery submits the 2008 Annual Groundwater Report as required by NMED and OCD directives. This report summarizes all groundwater monitoring activities that occurred in 2008.

If you have questions or would like to discuss any aspect of the report, please contact me at (505) 632-4171.

Sincerely,

James R. Schmaltz  
Environmental Manager  
Western Refining Southwest, Inc. - Bloomfield Refinery

cc: Laurie King, EPA Region VI  
Brandon Powell, NM OCD Aztec District Office  
Carl Chavez - NMOCD Santa Fe - w/o enclosure  
Allen Hains, Western Refining - El Paso



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## **Section 1.0    Executive Summary**

## **Executive Summary**

Bloomfield Refinery  
#50 Road 4990  
Bloomfield, New Mexico  
87413

US EPA ID: NMD089416416

This report provides a summary of site-wide groundwater monitoring that took place at Bloomfield Refinery throughout 2008. Sampling and analysis followed the guidelines from the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)*.

### **Groundwater Measurements**

Bloomfield Refinery personnel began a quarterly groundwater level measurement program in February 2008. This program will continue throughout 2009.

### **Groundwater Monitoring**

Semi-annual (April) and annual (August) groundwater sampling were performed to monitor potential impacts to groundwater quality associated with historic refinery operations. Both sampling events followed guidelines from the *Facility-wide Groundwater Monitoring Plan (Revised May 2008)*. Future sampling events will continue to follow the most updated Plan.

### **San Juan River**

The San Juan River was sampled on a bi-annual basis in 2008. Analytical results indicate that impacted groundwater from the refinery has not impacted the river.

### **Tank #33 Effluent**

Tank #33 effluent was scheduled for quarterly sampling in 2008. First quarter 2008 analytical results for benzene exceeded the regulatory limit of 500 ppb. Tank #33 discharge was sampled on a weekly basis from April 10, 2008 to November 3, 2008 and then sampling frequency was reduced to once per month. Since the first quarter exceedance, subsequent benzene results did not surpass toxicity standards at Tk #33 effluent for the rest of 2008.

### **North Boundary Barrier Wall**

Groundwater elevation maps indicate that the North Boundary Barrier Wall is performing as intended by capturing the water along the south side of the wall. Inspections of the draws north of the barrier wall indicate where seepage of fuel hydrocarbon impacted water was present has been eliminated.

Visual inspection of Seeps 1-9 has shown groundwater discharge from the seeps along the river bluff has decreased significantly since installation of the slurry wall. It now appears that only seeps #1, #6, #7, #8, and #9 have any actual discharge of ground water as opposed to apparent periodic accumulation of stormwater in the other seep basins. Weekly inspections continue to confirm that the vast majority of the fluids in the outfalls are from precipitation events.

### **Recommendations**

Review of the SVOC analytical results indicate that the few contaminants that do show up in the EPA Method 8270 test can also be detected with EPA Method 8260B. As stated in 5.1.2 of the Monitoring Plan, consideration for on-going monitoring of total metals and SVOC analysis will be assessed for necessity for future monitoring events. Future monitoring and remedial action will follow the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)* or the most updated plan.

## **Section 2.0    Introduction**

# INTRODUCTION

## 2008 Groundwater Remediation and Monitoring Annual Report

Owner: Western Refining (parent corporation)  
123 W. Mills Ave., Suite 200  
El Paso, TX 79901

Operator: Western Refining Southwest, Inc. (postal address)  
P.O. Box 159  
Bloomfield, New Mexico 87413

Western Refining Southwest, Inc. (physical address)  
#50 Rd 4990  
Bloomfield, New Mexico 87413

Facility Name: Bloomfield Refinery (physical address)  
#50 Rd 4990  
Bloomfield, New Mexico 87413

Facility Status Corrective Action/Compliance

US EPA ID NMD089416416

SIC Code 2911

Submittal Date: April 2009

Purpose of Groundwater Monitoring: To evaluate present contamination

Type of Groundwater Monitoring: Semi-annual, Annual, and Investigative

## **BACKGROUND INFORMATION**

### **SITE LOCATION AND DESCRIPTION**

The Bloomfield Refinery is a crude oil refining facility with a crude capacity of 18,000 barrels per day. It is located approximately 1 mile south of Bloomfield, New Mexico, in San Juan County, latitude N36 41' 87", longitude W107 58' 70". It is further located approximately ½ mile east of State Route 550 on County Road 4990 (a.k.a. Sullivan Road).

The refinery is located on a bluff 120 feet above the south side of the San Juan River. The top of the bluff is relatively flat and is at an elevation of 5,540 feet above sea level. The geological units that comprise the site include, in order of increasing depth, San Juan River Alluvium, Quaternary apron deposits, Aeolian sand and silt, Jackson Lake Terrace, and the Tertiary Nacimiento Formation. An unnamed arroyo flows toward the San Juan River on the southern and western edges of the site. East of the site, a well-defined arroyo cuts a small canyon from the bluff to the San Juan River. Hammond Ditch lies on the bluff between the limit of the Jackson Lake Terrace and the refinery.

Refinery offices are on the western end of the facility, along with warehouse space, maintenance areas, and a storage yard containing used material (e.g., pipes, valves). Petroleum processing units, located in the northwest portion of the refinery, include the crude unit, fluidized cracking unit, catalytic polymerization unit, and hydrodesulfurization unit. The API Separator and the aeration lagoons are located in the north central section of the refinery.

In the central portion of the site, aboveground storage tanks (AST's) occupy a large percentage of refinery property. South of the refinery and across Sullivan Road are terminals for loading product and off-loading crude, as well as gas storage and hazardous waste storage.

Western Refining merged with San Juan Refining Company (SJRC) May 31, 2007. The refinery is operated by Western Refining Southwest, Inc. The historical and current activities conducted at the refinery are petroleum processing, crude and product storage, crude unloading and product loading, waste management (closed and existing facilities), and offices and non-petroleum material storage

## **HISTORY OF FACILITY MODIFICATIONS AND IMPROVEMENTS**

### **Previous Owner's Activities**

Local entrepreneur, Kimball Campbell, constructed the crude topping unit that eventually became the GRC facility in the late 1950s. O.L. Garretson bought the facility in the early 1960s, renamed it Plateau, Inc. and sold it in 1964 to Suburban Propane of New Jersey.

Operationally, the facility has steadily evolved through a series of improvements, modifications and expansions. Suburban upgraded the facility in 1966, increasing the Crude Unit throughput to 4,100 bpcd and adding 1,850 bpcd Reformer and Naphtha Hydrotreater. In 1975, the Crude Unit was expanded to 8,400 bpcd.

In 1979, the Crude Unit was expanded again to 16,800 bpcd (later demonstrated to have a hydraulic capacity in excess of 18,000 bpcd). A Fluidized Catalytic Cracker (FCC) with a nominal capacity of 6,000 bpcd, an Unsaturated Gas Plant and a Treater Unit were also added at that time. The capacity of the Reformer / Hydrotreater was increased to 2,250 bpcd. The FCC was upgraded in 1982 to conform to State and Federal air quality standards.

### **Bloomfield Refining Activities**

Bloomfield Refining Company (BRC) acquired the facility from Suburban Propane (Plateau) on October 31, 1984. BRC made many improvements to facility operations and equipment. These improvements are summarized below.

#### **1986**

Relocated the spent caustic tank onto a concrete pad with retaining walls.

#### **1987**

Upgraded the Reformer and increased its capacity to 3,600 bpcd, modified the Laboratory and Treater Unit and increased tank storage capacity.

Cleaned up the North and South bone yards.

Decommissioned and dismantled old tanks 6 and 7.



Relocated the API recovered oil tanks 8 & 9 to concrete pads with concrete retaining walls.

Established a systematic inspection, maintenance and repair program for tanks.

#### **1988**

Added a 2,000 bpcd Catalytic Polymerization Unit. Removed the facility's two underground storage tanks and replaced them with aboveground storage tanks.

Completed installation of cathodic protection system for the tank farm and underground piping.

Rebuilt the process area sewer system and added curbed, concrete paving to the unpaved process areas.

#### **1989**

Increased Reformer throughput to 4,000 bpcd.

Activated the groundwater hydrocarbon recovery system.

Constructed the first double-lined Evaporation Pond as part of discharge plan improvements.

#### **1990**

Constructed the second double-lined Evaporation Pond as part of discharge plan improvements.

Constructed a drum storage shed and converted to bulk chemical usage where possible in order to minimize the use of drummed chemicals.

#### **1991**

Revamped the burner fuel sales rack with concrete paving and curbing.

Submitted the permit application for a Class 1 disposal well.

Upgraded the groundwater hydrocarbon recovery system.

#### **1992**

Submitted an air quality permit application proposing the installation of a Diesel Hydrodesulfurization (HDS) Unit and a Sulfur Recovery Unit (SRU) to comply with new EPA low-sulfur diesel regulations and to decrease air emissions.

### **1993**

Began a program under a consent agreement with the US EPA to conduct interim measures (IM), a RCRA facility investigation (RFI) and a corrective measures study (CMS) addressing groundwater contamination.

Replaced portions of the underground cooling water piping.

Added concrete paving around the API Separator.

Added process units: HDS Unit (2,000 bpcd) and SRU..

### **1994**

Completed the Class 1 injection well.

Retrofitted the Aeration Lagoons with two additional liners.

Installed a floating cover for the API Separator.

Closed the clay-lined evaporation ponds and spray evaporation area.

### **Giant Activities**

In 1995, San Juan Refining Company, a wholly owned subsidiary of Giant Industries Arizona, Inc., purchased the Bloomfield Refinery from BRC.

### **1995**

Improved the diking South of the Refinery to further reduce storm water runoff.

Began implementation of additional corrective measures for groundwater cleanup as determined from the CMS.

### **1998**

Converted the former evaporation ponds on the East side of the Refinery to raw water storage ponds.

### **1999**

Sheet pilings and a bentonite slurry wall were installed adjacent to the San Juan River, North of the process units, in order to intercept a small hydrocarbon seep that had been detected in the area.

## **2001**

A program was initiated to inoculate the Aeration Lagoons with sludge-consuming micro-organisms.

## **2002**

A concrete liner was installed on the Hammond Ditch. At that time, Giant constructed the Hammond Ditch French Drain Recovery System to address contamination under the ditch.

## **2003**

Several monitoring wells were converted into recovery wells to further enhance the continuing ground water remediation efforts. MW #45, #46 & #47 were installed to facilitate sample collection. East Outfall #1 Recovery System was set up to return impacted water back to the refinery.

## **2004**

MW #48 & MW #49 and 8 temporary piezometers were installed to launch a River Terrace Investigation. Several temporary piezometers were drilled on the north side of Hammond Ditch to chart the Nacimiento Formation. Design of a slurry wall to be constructed on the north side of Hammond Ditch was completed. Lined containments were constructed in the draws north of Hammond Ditch in order to collect potentially contaminated groundwater which discharged to the land surface.

Sewer lines were replaced in the Treater and FCC.

## **2005**

The North Boundary Barrier Wall installation was completed March 2005. Fourteen observation wells were installed on the north side of the slurry wall and fifteen collection wells were installed on the south side of the slurry wall in April 2005.

As a matter of preventive maintenance, the lined containments in the draws north of the slurry wall were upgraded periodically.

In April, five more temporary piezometers were installed at the River Terrace. In August, Dewatering Wells #1 and #2 and thirteen bioventing wells were drilled and construction of the River Terrace Bioventing Project was initiated.

## **2006**

The River Terrace Bioventing System was put on-line in January 2006. Monitoring data from that project is submitted in a separate report to the regulatory agencies.

During the week of February 13, 2006 seven sump wells were installed along the bluff north of the barrier wall. These wells were drilled in accordance with the North Barrier Wall Work Plan which was submitted to OCD February 7, 2006. Fluids extraction from the observation and collection wells, the north draws, and the sump wells continued throughout 2006.

As a matter of preventive maintenance, the lined containments in the draws north of the slurry wall were upgraded periodically.

## **2007**

On May 31, 2007, Giant Industries, Inc. became a wholly-owned subsidiary of Western Refining, Inc. of El Paso, Texas.

Construction of the Ammonia Refrigeration Unit (ARU) was completed and the system put on line by March 2007. This unit is used to recover propane from hydrogen streams.

Construction of the Benzene Stripper was completed and the system put in service by October 2007. This unit is used to strip benzene from process waste water.

Discharge piping was installed at RW #1 to increase the recovery capacity of he well.

As a matter of preventive maintenance, the lined containments in the draws north of the slurry wall (seeps 1-9) were upgraded periodically.

## **2008**

The *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)* was approved and implemented in the latter half of 2008.

Group #2 RCRA site investigation activities began in September 2008. Group #2 includes SWMU #2, SWMU #8, SWMU #9, SWMU #11, and SWMU #18.

As part of the *Closure Plan North and South Aeration Lagoons* the ponds were drained, cleaned out, inspected, repaired, and put back in service. This process started in October 2008 and was completed in February 2009.

## **Section 3.0    Scope of Activities**

## Scope of Activities

The following is a summary of the activities conducted in 2008.

### North Boundary Barrier Wall

Installation of the North Boundary Barrier Wall and Collection System was completed by late April 2005. Bloomfield Refinery personnel conducted a bi-weekly fluid measurement scheme requiring monitoring of all observation and collection wells as well as MW #11, MW #12, MW #20, MW #21, MW #39, MW #45, MW #46, and MW #47. This measurement program was established in August 2005 and continued throughout 2008. Measured depth to groundwater data from January 2008 through December 2008 is located in Appendix B, Section 15.0, Tabs 1 -12.

Using a vacuum truck, fluids were removed from the collection and observation wells on a 3 times per week basis until March 31, 2008. In January 2008, Bloomfield Refinery proposed to discontinue recovery operations using the vacuum truck and to begin using passive methods of separate phase removal in the observation wells. NMED responded with the letter *Approval with Direction Evaluation of Interim Measure* dated March 25, 2008, which allowed the cessation of fluids recovery from the Hammond Ditch wells.

Following the direction of Comment #2 of that letter, Bloomfield Refinery personnel collected depth to water and depth to product measurements from all observation well and collection wells, MW #45, and MW #47 twice a week for 90 days starting April 1, 2008. The collected data was submitted to NMED in the *Evaluation of Interim Measures* letter dated July, 15, 2008.

NMED, in conjunction with the Oil Conservation Division (OCD), replied to the submittal with their *Monitoring Requirements Evaluation of Interim Measures* letter dated September 2, 2008. Bloomfield Refinery personnel are continuing to collect depth to water and depth to product measurements from all observation well, MW #45, and MW #47 twice a week for six months starting October 1, 2008. The program will conclude on April 2, 2009.

Semi-Annual sample collection began during the week of April 7, 2008. Samples were collected and analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), and MTBE using EPA Method 8260 as well as Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) using EPA Method 8015B. Field measurements of pH, temperature, and E.C. were also taken.

Annual sampling occurred the week of August 11, 2008. Observation well samples were analyzed for BTEX, MTBE (EPA Method 8260), and DRO/GRO (8015B). Collection well samples were analyzed for BTEX, MTBE (EPA Method 8260), and DRO (8015B). Field measurements of pH, temperature, and electrical conductivity (E.C.) were also recorded.

During both sampling events, groundwater samples were collected from all observation wells and two collection wells (CW-0+60 and CW25+95) with the exception of wells that contain separate phase hydrocarbon or wells that were dry or did not contain enough water to collect a sample.

Analytical results and field measurements for the sampling events are summarized in Appendix B, Section 15.0, Tabs 13, 14, and 15.

### **Seeps/Sump Wells**

A bi-weekly visual inspection of Seeps 1-9 occurred through to March 2008. In April 2008 Bloomfield Refinery personnel began visually inspecting all seep locations on a weekly basis following the direction of Comment 2 in the NMED letter *Approval with Direction Facility-Wide Groundwater Monitoring Plan* dated March 25, 2008.

Before implementation of the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)* and during the week of April 15, 2008, semi-annual samples were collected from Seeps 1, 6, 7, and 9 and analyzed for BTEX by EPA Method 8021B. Analytical results can be found in Section 9.0, Tab 9.0.

During the week of August 11, 2008, samples were collected from Seeps 1, 3, and 6 and as required by the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)* were analyzed for BTEX and MTBE (EPA 8260), SVOCs (EPA 8270), and general chemistry (EPA 300.0 and SM2320B). Results can be found in Section 9.0, Tab 9.0.

A bi-weekly fluid measurement program was utilized to monitor the sump wells. Additional monitoring occurred after major precipitation events in August and December. Monitoring data can be found in Section 9.0, Tab 3.0.

### **Groundwater Monitoring**

Tank #33 effluent was scheduled for quarterly sampling in 2008. First Quarter 2008 analytical results for benzene exceeded the regulatory limit of 500 ppb. In response to the benzene exceedance the East Outfall #1 system was shut down and steps were taken to reroute the water via vacuum truck to the API Separator and wastewater treatment system. Tanks #38 and #33 were dewatered, cleaned, and inspected. An air compressor was set up to aerate the water in Tank #38 before it is pumped to Tank #33. Tank #33 discharge was sampled on a weekly basis from April 10, 2008 to November 3, 2008 and analyzed for BTEX/MTBE (EPA 8260). Beginning in December 2008, NMED allowed Bloomfield Refinery to reduce the sampling frequency to once per month. Analytical results are in Section 9.0, Tab 10.0.

The facility-wide semi-annual monitoring event occurred during the week of April 7, 2008. Guidelines from the *Facility-Wide Groundwater Monitoring Plan (revised December 2007)* were followed. East Outfall #2 and East Outfall #3 were sampled and analyzed for BTEX/MTBE (EPA 8260), Dissolved Metals (EPA

6010B), Total Metals (EPA 6010b & 7470), Anions (EPA 300.0), and Alkalinity (SM 2320B). Field measurements of E.C., pH, and temperature were also read. Samples were collected from MW #1, MW #8, MW #12, MW #13, MW #30, MW #33, MW #35, MW #37, and MW #38 and analyzed for BTEX/MTBE (EPA 8260) and GRO/DRO (EPA 8015B). Analytical results are summarized in Section 9.0, Tabs 4.0, 5.0, 6.0, 7.0, 8.0, and 9.0.

Annual sampling started the week of August 11, 2008. The *Facility-wide Groundwater Monitoring Plan (Revised May 2008)* was followed.

The following wells were sampled; MW #1, MW #4, MW #8, MW #11, MW #12, MW #13, MW #26, MW #27, MW #29, MW #30, MW #31, MW #32, MW #33, MW #34, MW #35, MW #37, MW #38, MW #40, MW #44, RW #1, RW #9, RW #15, RW #23, O/F #2, and O/F #3. The samples were analyzed for VOCs by using EPA Method 8260B, SVOCs by EPA Method 8270, TPH through EPA Method 8015B, Total RCRA 8 Metals using EPA Methods 6010B/7470, WQCC Dissolved Metals using EPA Method 6010B, Anions using EPA Methods 300.0, and Alkalinity/Carbon Dioxide by SM 2320B.

The analytical laboratory inadvertently did not analyze for calcium, magnesium, potassium, and sodium from some samples collected during the annual sampling event. This issue has been addressed with the lab and corrected for future monitoring activities. Due to matrix interferences, the selenium reporting level on several samples is above the regulatory level of 0.05 mg/L. Hall Environmental Analytical Laboratory felt it was necessary to dilute the sample in order to accurately report selenium.

MW #3, MW #5, and MW #6 were dry and no samples were taken. MW #20, MW #21, RW #9, RW #18, RW #28, RW #42, and RW #43 contained separate phase hydrocarbon and were not sampled. Results are summarized in Section 9.0, Tabs 4.0, 5.0, 6.0, 7.0, 8.0, and 9.0.

### **San Juan River**

The San Juan River was sampled on a semi-annual basis in 2008. Samples were collected in March and August and analyzed for BTEX/MTBE (EPA Method 8021B in March and 8260 in August), TPH (EPA Method 8015B), Total RCRA 8 Metals (EPA Methods 6010B/7470), WQCC Dissolved Metals (EPA Method 6010B), Cations, Anions (EPA Method 300.0), and Alkalinity/Carbon Dioxide using SM 2320B.

Analysis is summarized in Section 9.0, Tab 11.0.

## **Field Data Collection**

Bloomfield Refinery personnel began a supplemental quarterly groundwater level measurement program in February 2008. All facility monitoring wells, recovery wells, observation and collection wells were measured for groundwater elevation



in February and April. Recovery well pumps were shut off and the extraction of fluids ceased. Measurements of water and product levels were taken 48 hours after the cessation of fluid extraction.

In August, refinery personnel followed the guidelines of the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)* to collect groundwater levels and SPH thickness measurements. Prior to annual groundwater sampling activities, water elevation measurements were collected in all wells while the recovery wells were in operation and again after the pumps were removed and water levels had stabilized (5 days later). October groundwater level measurement procedures followed the protocol from the February and April program. Measured depth to groundwater information is in Section 9.0, Tabs 1.0, 2.0, and 3.0.

All water/product levels were measured to an accuracy of 0.01 foot using a Geotech Interface Probe. After determining water levels, well volumes were calculated during sampling events.

At least three well volumes were purged from each well prior to sampling. Electrical conductance, pH, and temperature were monitored during purging using an Ultrameter 6P. The wells were considered satisfactorily purged when the pH, E.C., and temperature values did not vary by more than 10 percent for at least three measurements.

Field data and well elevations can be found in Section 9.0, Tabs 1.0, 2.0, 3.0, and 4.0.

All purged water was collected in a fifty-five gallon drum and disposed of through the refinery wastewater system.

**Section 4.0     Regulatory Criteria / Groundwater Cleanup Standards/  
State of New Mexico Soil Screening Levels**

# Table of New Mexico and USEPA Groundwater Standards

<b>Metals</b>	<b>(mg/l)</b>
Antimony	0.006 <sup>2</sup>
Arsenic	0.01 <sup>2</sup>
Barium	1.0
Beryllium	0.004 <sup>2</sup>
Cadmium	0.005 <sup>2</sup>
Chromium	0.05
Cobalt	0.05
Copper	1.0
Cyanide	0.2
Lead	0.05
Mercury	0.002
Nickel	0.200
Selenium	0.05
Silver	0.05
Uranium	0.03
Vanadium	0.18 <sup>3</sup>
Zinc	10.0

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Region VI Human Health Medium-Specific Screening Level 2008

Ne - not established

# Table of New Mexico and USEPA Groundwater Standards

<b><i>Semivolatiles</i></b>	<b>(ug/l)</b>
1,2,4-Trichlorobenzene	70 <sup>2</sup>
1,2-Dichlorobenzene	49 <sup>3</sup>
1,3-Dichlorobenzene	14 <sup>3</sup>
1,4-Dichlorobenzene	0.47 <sup>3</sup>
2,4,5-Trichlorophenol	3,700 <sup>3</sup>
2,4,6-Trichlorophenol	6.1 <sup>3</sup>
2,4-Dichlorophenol	110 <sup>3</sup>
2,4-Dimethylphenol	730 <sup>3</sup>
2,4-Dinitrophenol	73 <sup>3</sup>
2,4-Dinitrotoluene	73 <sup>3</sup>
2,6-Dinitrotoluene	37 <sup>3</sup>
2-Chloronaphthalene	490 <sup>3</sup>
2-Chlorophenol	30 <sup>3</sup>
2-Methylnaphthalene	Ne
2-Methylphenol	1,800 <sup>3</sup>
2-Nitroaniline	110 <sup>3</sup>
2-Nitrophenol	Ne
3,3'-Dichlorobenzidine	Ne
3+4-Methylphenol	180 <sup>3</sup>
3-Nitroaniline	Ne
4,6-Dinitro-2-methylphenol	Ne
4-Bromophenyl phenyl ether	Ne
4-Chloro-3-methylphenol	Ne
4-Chloroaniline	150 <sup>3</sup>
4-Chlorophenyl phenyl ether	Ne
4-Nitroaniline	Ne
4-Nitrophenol	290 <sup>3</sup>
Acenaphthene	370 <sup>3</sup>
Acenaphthylene	Ne

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Region VI Human Health Medium-Specific Screening Level 2008

Ne - not established

# Table of New Mexico and USEPA Groundwater Standards

<b><i>Semivolatiles</i></b>	<b>(ug/l)</b>
Aniline	12 <sup>3</sup>
Anthracene	1,800 <sup>3</sup>
Azobenzene	0.61 <sup>3</sup>
Benz(a)anthracene	0.029 <sup>3</sup>
Benzo(a)pyrene	0.2 <sup>2</sup>
Benzo(b)fluoranthene	0.029 <sup>3</sup>
Benzo(g,h,i)perylene	Ne
Benzo(k)fluoranthene	0.29 <sup>3</sup>
Benzoic acid	150,000 <sup>3</sup>
Benzyl alcohol	11,000 <sup>3</sup>
Bis(2-chloroethoxy)methane	Ne
Bis(2-chloroethyl)ether	0.0098 <sup>3</sup>
Bis(2-chloroisopropyl)ether	Ne
Bis(2-ethylhexyl)phthalate	4.8 <sup>3</sup>
Butyl benzyl phthalate	7,300 <sup>3</sup>
Carbazole	3.4 <sup>3</sup>
Chrysene	2.9 <sup>3</sup>
Dibenz(a,h)anthracene	0.0029 <sup>3</sup>
Dibenzofuran	12 <sup>3</sup>
Diethyl phthalate	29,000 <sup>3</sup>
Dimethyl phthalate	370,000 <sup>3</sup>
Di-n-butyl phthalate	Ne
Di-n-octyl phthalate	Ne
Fluoranthene	1,500 <sup>3</sup>
Fluorene	240 <sup>3</sup>
Hexachlorobenzene	1.0 <sup>2</sup>
Hexachlorobutadiene	0.86 <sup>3</sup>
Hexachlorocyclopentadiene	50 <sup>2</sup>
Hexachloroethane	4.8 <sup>3</sup>

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Region VI Human Health Medium-Specific Screening Level 2008

Ne - not established

# Table of New Mexico and USEPA Groundwater Standards

<b><i>Semivolatiles</i></b>	<b>(ug/l)</b>
Indeno(1,2,3-cd)pyrene	0.029 <sup>3</sup>
Isophorone	71 <sup>3</sup>
Naphthalene	30
Nitrobenzene	3.4 <sup>3</sup>
N-Nitrosodimethylamine	0.00042 <sup>3</sup>
N-Nitrosodi-n-propylamine	0.0096 <sup>3</sup>
N-Nitrosodiphenylamine	14 <sup>3</sup>
Pentachlorophenol	1 <sup>2</sup>
Phenanthrene	Ne
Phenol	Ne
Pyrene	180 <sup>3</sup>
Pyridine	37 <sup>3</sup>

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Region VI Human Health Medium-Specific Screening Level 2008

Ne - not established

# Table of New Mexico and USEPA Groundwater Standards

<b>Volatiles</b>	<b>(ug/l)</b>
1,1,1,2-Tetrachloroethane	0.43 <sup>3</sup>
1,1,1-Trichloroethane	60
1,1,2,2-Tetrachloroethane	10
1,1,2-Trichloroethane	10
1,1-Dichloroethane	25
1,1-Dichloroethene	5
1,1-Dichloropropene	Ne
1,2,3-Trichlorobenzene	Ne
1,2,3-Trichloropropane	0.034 <sup>3</sup>
1,2,4-Trichlorobenzene	70.0 <sup>2</sup>
1,2,4-Trimethylbenzene	15.0 <sup>3</sup>
1,2-Dibromo-3-chloropropane	0.2 <sup>2</sup>
1,2-Dibromoethane (EDB)	0.1
1,2-Dichlorobenzene	600.0 <sup>2</sup>
1,2-Dichloroethane (EDC)	10
1,2-Dichloropropane	5.0 <sup>2</sup>
1,3,5-Trimethylbenzene	Ne
1,3-Dichlorobenzene	Ne
1,3-Dichloropropane	120 <sup>3</sup>
1,4-Dichlorobenzene	75.0 <sup>2</sup>
1-Methylnaphthalene	Ne
2,2-Dichloropropane	Ne
2-Butanone	710.0 <sup>3</sup>
2-Chlorotoluene	120.0 <sup>3</sup>
2-Hexanone	Ne
2-Methylnaphthalene	Ne
4-Chlorotoluene	Ne
4-Isopropyltoluene	Ne
4-Methyl-2-pentanone	Ne

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Region VI Human Health Medium-Specific Screening Level 2008

Ne - not established

# Table of New Mexico and USEPA Groundwater Standards

<b>Volatiles</b>	<b>(ug/l)</b>
Acetone	5,500 <sup>3</sup>
Benzene	5 <sup>2</sup>
Bromobenzene	23.0 <sup>3</sup>
Bromodichloromethane	0.18 <sup>3</sup>
Bromoform	8.5 <sup>3</sup>
Bromomethane	8.7 <sup>3</sup>
Carbon disulfide	1,000 <sup>3</sup>
Carbon Tetrachloride	5.0 <sup>3</sup>
Chlorobenzene	100.0 <sup>2</sup>
Chloroethane	Ne
Chloroform	100
Chloromethane	190 <sup>3</sup>
cis-1,2-DCE	70 <sup>2</sup>
cis-1,3-Dichloropropene	0.4 <sup>3</sup>
Dibromochloromethane	0.13 <sup>3</sup>
Dibromomethane	Ne
Dichlorodifluoromethane	390 <sup>3</sup>
Ethylbenzene	700 <sup>2</sup>
Hexachlorobutadiene	0.86 <sup>3</sup>
Isopropylbenzene	Ne
Methyl tert-butyl ether (MTBE)	11 <sup>3</sup>
Methylene Chloride	4.3 <sup>3</sup>
Naphthalene	Ne
n-Butylbenzene	61 <sup>3</sup>
n-Propylbenzene	61 <sup>3</sup>
sec-Butylbenzene	61 <sup>3</sup>
Styrene	100 <sup>2</sup>
tert-Butylbenzene	61 <sup>3</sup>
Tetrachloroethene (PCE)	5 <sup>2</sup>

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Region VI Human Health Medium-Specific Screening Level 2008

Ne - not established



## Table of New Mexico and USEPA Groundwater Standards

<b><i>Volatiles</i></b>	<b>(ug/l)</b>
Toluene	750
trans-1,2-DCE	100 <sup>2</sup>
trans-1,3-Dichloropropene	0.4 <sup>3</sup>
Trichloroethene (TCE)	5 <sup>2</sup>
Trichlorofluoromethane	1,300 <sup>3</sup>
Vinyl chloride	1
Xylenes, Total	620

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Region VI Human Health Medium-Specific Screening Level 2008

Ne - not established

## Table of New Mexico and USEPA Groundwater Standards

<b>General Chemistry</b> (mg/l)	
Alkalinity, Total (As CaCO <sub>3</sub> )	Ne
Bicarbonate	Ne
Calcium	Ne
Carbonate	Ne
Chloride	250
Iron	1
Magnesium	Ne
Manganese	0.2
Nitrogen, Nitrate (As N)	10
Nitrogen, Nitrite (As N)	Ne
Nitrate (As N)+Nitrite (As N)	10
Potassium	Ne
Sodium	Ne
Sulfate	600

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Region VI Human Health Medium-Specific Screening Level 2008

Ne - not established

**20.6.2.3103 STANDARDS FOR GROUND WATER OF 10,000 mg/l TDS CONCENTRATION OR LESS:** The following standards are the allowable pH range and the maximum allowable concentration in ground water for the contaminants specified unless the existing condition exceeds the standard or unless otherwise provided in Subsection D of Section 20.6.2.3109 NMAC. Regardless of whether there is one contaminant or more than one contaminant present in ground water, when an existing pH or concentration of any water contaminant exceeds the standard specified in Subsection A, B, or C of this section, the existing pH or concentration shall be the allowable limit, provided that the discharge at such concentrations will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section. These standards shall apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "*methods for chemical analysis of water and waste of the U.S. environmental protection agency*," with the exception that standards for mercury, organic compounds and non-aqueous phase liquids shall apply to the total unfiltered concentrations of the contaminants.

**A. Human Health Standards**-Ground water shall meet the standards of Subsection A and B of this section unless otherwise provided. If more than one water contaminant affecting human health is present, the toxic pollutant criteria as set forth in the definition of toxic pollutant in Section 20.6.2.1101 NMAC for the combination of contaminants, or the Human Health Standard of Subsection A of Section 20.6.2.3103 NMAC for each contaminant shall apply, whichever is more stringent. Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.

(1)	Arsenic (As).....	0.1 mg/l
(2)	Barium (Ba).....	1.0 mg/l
(3)	Cadmium (Cd).....	0.01 mg/l
(4)	Chromium (Cr).....	0.05 mg/l
(5)	Cyanide (CN).....	0.2 mg/l
(6)	Fluoride (F).....	1.6 mg/l
(7)	Lead (Pb).....	0.05 mg/l
(8)	Total Mercury (Hg).....	0.002 mg/l
(9)	Nitrate (NO <sub>3</sub> as N).....	10.0 mg/l
(10)	Selenium (Se).....	0.05 mg/l
(11)	Silver (Ag).....	0.05 mg/l
(12)	Uranium (U).....	0.03 mg/l
(13)	Radioactivity: Combined Radium-226 & Radium-228.....	30 pCi/l
(14)	Benzene.....	0.01 mg/l
(15)	Polychlorinated biphenyls (PCB's).....	0.001 mg/l
(16)	Toluene.....	0.75 mg/l
(17)	Carbon Tetrachloride.....	0.01 mg/l
(18)	1,2-dichloroethane (EDC).....	0.01 mg/l
(19)	1,1-dichloroethylene (1,1-DCE).....	0.005 mg/l
(20)	1,1,2,2-tetrachloroethylene (PCE).....	0.02 mg/l
(21)	1,1,2-trichloroethylene (TCE).....	0.1 mg/l
(22)	ethylbenzene.....	0.75 mg/l
(23)	total xylenes.....	0.62 mg/l
(24)	methylene chloride.....	0.1 mg/l
(25)	chloroform.....	0.1 mg/l
(26)	1,1-dichloroethane.....	0.025 mg/l
(27)	ethylene dibromide (EDB).....	0.0001 mg/l
(28)	1,1,1-trichloroethane.....	0.06 mg/l
(29)	1,1,2-trichloroethane.....	0.01 mg/l
(30)	1,1,2,2-tetrachloroethane.....	0.01 mg/l
(31)	vinyl chloride.....	0.001 mg/l
(32)	PAHs: total naphthalene plus monomethylnaphthalenes.....	0.03 mg/l
(33)	benzo-a-pyrene.....	0.0007 mg/l

**B. Other Standards for Domestic Water Supply**

(1)	Chloride (Cl).....	250.0 mg/l
(2)	Copper (Cu).....	1.0 mg/l
(3)	Iron (Fe).....	1.0 mg/l
(4)	Manganese (Mn).....	0.2 mg/l
(6)	Phenols.....	0.005 mg/l
(7)	Sulfate (SO <sub>4</sub> ).....	600.0 mg/l
(8)	Total Dissolved Solids (TDS).....	1000.0 mg/l
(9)	Zinc (Zn).....	10.0 mg/l
(10)	pH.....	between 6 and 9

**C. Standards for Irrigation Use** - Ground water shall meet the standards of Subsection A, B, and C of

**this section unless otherwise provided.**

- (1) Aluminum (Al).....5.0 mg/l
- (2) Boron (B) .....0.75 mg/l
- (3) Cobalt (Co) .....0.05 mg/l
- (4) Molybdenum (Mo) .....1.0 mg/l
- (5) Nickel (Ni) .....0.2 mg/l

[2-18-77, 1-29-82, 11-17-83, 3-3-86, 12-1-95; 20.6.2.3103 NMAC - Rn, 20 NMAC 6.2.III.3103, 1-15-01; A, 9-26-04]

[Note: For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007. For any new water discharges, the uranium standard is effective 9-26-04]

**NEW MEXICO ENVIRONMENT DEPARTMENT TPH SCREENING GUIDELINES**  
**October 2006**

In some instances, it may be practical to assess areas of soil contamination that are the result of releases of petroleum products such as jet fuel and diesel, using total petroleum hydrocarbon (TPH) analyses. TPH results may be used to delineate the extent of petroleum-related contamination at these sites and ascertain if the residual level of petroleum products in soil represents an unacceptable risk to future users of the site. Petroleum hydrocarbons represent complex mixtures of compounds, some of which are regulated constituents and some compounds that are not regulated. In addition, the amount and types of the constituent compounds in a petroleum hydrocarbon release differ widely depending on what type of product was spilled and how the spill has weathered. This variability makes it difficult to determine the toxicity of weathered petroleum products in soil solely from TPH results; however, these results can be used to approximate risk in some cases, depending upon the nature of the petroleum product, the release scenario, how well the site has been characterized, and anticipated potential future land uses. In some cases, site clean up cannot be based solely on results of TPH sampling. The New Mexico Environment Department (NMED) will make these determinations on a case by case basis. If NMED determines that additional data are necessary, these TPH guidelines must be used in conjunction with the screening guidelines for individual petroleum-related contaminants in Table 3 and other contaminants, as applicable.

The screening levels for each petroleum carbon range from the Massachusetts Department of Environmental Protection (MADEP) Volatile Petroleum Hydrocarbons/Extractable Petroleum Hydrocarbons (VPH/EPH) approach and the percent composition table below were used to generate screening levels corresponding to total TPH. Except for waste oil, the information in the compositional assumptions table was obtained from the Massachusetts Department of Environmental Protection guidance document *Implementation of the MADEP VPH/EPH Approach* (October 31, 2002). TPH toxicity was based only on the weighted sum of the toxicity of the hydrocarbon fractions listed in Table 1.

**Table 1. TPH Compositional Assumptions in Soil**

Petroleum Product	C11-C22 Aromatics	C9-C18 Aliphatics	C19-C36 Aliphatics
Diesel #2/ new crankcase oil	60%	40%	0%
#3 and #6 Fuel Oil	70%	30%	0%
Kerosene and jet fuel	30%	70%	0%
Mineral oil dielectric fluid	20%	40%	40%
Unknown oil <sup>a</sup>	100%	0%	0%
Waste Oil <sup>b</sup>	0%	0%	100%

<sup>a</sup> Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

<sup>b</sup> Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

A TPH screening guideline was calculated for each of the types of petroleum product based on the assumed composition from Table 1 for petroleum products and the direct soil standards incorporating ceiling concentrations given in the MADEP VPH/EPH Excel spreadsheet for each of the carbon fractions. Groundwater concentrations are based on the weighted sum of the noncarcinogenic toxicity of the petroleum fractions.

Method 1 from the MADEP VPH/EPH document was applied, which represents generic cleanup standards for soil and groundwater. Method 1 applies if contamination exists in only soil and groundwater. The MADEP VPH/EPH further divides groundwater into standards. Standard GW-1 applies when groundwater may be used for drinking water purposes. GW-1 standards are based upon ingestion and use of groundwater as a potable water supply. The TPH screening guidelines for sites with potable groundwater are presented in Table 2a.

**Table 2a. TPH Screening Guidelines for Potable Groundwater (GW-1)**

Petroleum Product	TPH		Concentration in Groundwater (mg/L)
	Residential Direct Exposure (mg/kg)	Industrial Direct Exposure (mg/kg)	
Diesel #2/crankcase oil	520	1120	1.72
#3 and #6 Fuel Oil	440	890	1.34
Kerosene and jet fuel	760	1810	2.86
Mineral oil dielectric fluid	1440	3040	3.64
Unknown oil <sup>a</sup>	200	200	0.2
Waste Oil <sup>b</sup>	2500	5000	Petroleum-Related Contaminants
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants
<sup>a</sup> Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.			
<sup>b</sup> Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.			

The second standard is GW-2, which is applicable for sites where the depth to groundwater is less than 15 feet from the ground surface and within 30 feet of an occupied structure. The structure may be either residential or industrial. GW-2 standards are based upon "inhalation exposures that could occur to occupants of the building impacted by volatile compounds, which partition from the groundwater" (MADEP 2001). The GW-2 screening guidelines ONLY apply for the evaluation of inhalation exposures. If potential ingestion or contact with contaminated soil and/or

groundwater could occur, then the screening guidelines provided in Table 2.a should be applied. Table 2.b lists the TPH screening guidelines for the inhalation scenario.

**Table 2b. TPH Screening Guidelines – Vapor Migration and Inhalation of Groundwater (GW-2)**

TPH			Concentration in Groundwater (mg/L)
Petroleum Product	Residential Direct Exposure (mg/kg)	Industrial Direct Exposure (mg/kg)	
Diesel #2/crankcase oil	880	2200	30.4
#3 and #6 Fuel Oil	860	2150	35.3
Kerosene and jet fuel	940	2350	15.7
Mineral oil dielectric fluid	1560	3400	10.4
Unknown oil <sup>a</sup>	800	2000	50.0
Waste Oil <sup>b</sup>	2500	5000	Petroleum-Related Contaminants
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants
<p><sup>a</sup> Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.</p> <p><sup>b</sup> Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.</p>			

Mineral oil based hydraulic fluids can be evaluated for petroleum fraction toxicity using the screening guidelines from Tables 2a and 2b specified for waste oil, because this type of hydraulic fluid is composed of approximately the same range of carbon fractions as waste oil. However, these hydraulic fluids often contain proprietary additives that may be significantly more toxic than the oil itself; these additives must be considered on a site- and product-specific basis (see ATSDR hydraulic fluids profile reference). **Use of alternate screening guideline values requires prior written approval from the New Mexico Environment Department.** TPH screening guidelines in Tables 2a and 2b must be used in conjunction with the screening levels for petroleum-related contaminants given in Table 3 because the TPH screening levels are NOT designed to be protective of exposure to these individual petroleum-related contaminants. Table 3 petroleum-related contaminants screening levels are based on the *NMED Technical Background Document for Development of Soil Screening Levels, Rev 4.0 (June 2006)*.

The list of petroleum-related contaminants does not include polyaromatic hydrocarbons (PAHs) with individual screening levels that would exceed the total TPH screening levels (acenaphthene, anthracene, flouranthene, flourene, and pyrene). In addition, these TPH screening guidelines are based solely on human health, not ecological risk considerations, protection of surface water, or

potential indoor air impacts from soil vapors. Potential soil vapor impacts to structures or utilities are not addressed by these guidelines. Site-specific investigations for potential soil vapor impacts to structures or utilities must be done to assure that screenings are consistently protective of human health, welfare or use of the property. NMED believes that use of these screening guidelines will allow more efficient screenings of petroleum release sites at sites while protecting human health and the environment. Copies of the references cited below are available on the MADEP website at [http://www.state.ma.us/dep/bwsc/vph\\_eph.htm](http://www.state.ma.us/dep/bwsc/vph_eph.htm) and the NMED website at <http://www.nmenv.state.nm.us/HWB/guidance.html>.

**Revised Table 3. Petroleum-Related Contaminants Screening Guidelines**

Petroleum-Related Contaminants	Values for Direct Exposure to Soil		NMED DAF <sup>a</sup> 20 GW Protection (mg/kg in soil)	NMED DAF <sup>b</sup> 1 GW Protection (mg/kg in soil)
	NMED Residential SSL (mg/kg)	NMED Industrial SSL (mg/kg)		
Benzene	1.03E+01	2.58E+01	2.01E-02	1.00E-03
Toluene	2.52E+02	2.52E+02	2.17E+01	1.08E+00
Ethylbenzene	1.28E+02	1.28E+02	2.02E+01	1.01E+00
Xylenes <sup>c</sup>	8.20E+01	8.20E+01	2.06E+00	1.03E-01
Naphthalene	7.95E+01	3.00E+02	3.94E-01	1.97E-02
2-Methyl naphthalene <sup>d</sup>	5.00E+02	1.00E+03	— <sup>e</sup>	— <sup>e</sup>
Benzo(a)anthracene	6.21E+00	2.34E+01	1.09E+01	5.43E-01
Benzo(b)fluoranthene	6.21E+00	2.34E+01	3.35E+01	1.68E+00
Benzo(k)fluoranthene	6.21E+01	2.34E+02	3.35E+02	1.68E+01
Benzo(a)pyrene	6.21E-01	2.34E+00	2.78E+00	1.39E-01
Chrysene	6.15E+02	2.31E+03	3.48E+02	1.74E+01
Dibenz(a,h)anthracene	6.21E-01	2.34E+00	1.04E+01	5.18E-01
Indeno(1,2,3-c,d)pyrene	6.21E+00	2.34E+01	9.46E+01	4.73E+00
<p><sup>a</sup> DAF - Dilution Attenuation Factor</p> <p><sup>b</sup> For contaminated soil in contact with groundwater.</p> <p><sup>c</sup> Based upon total xylenes</p> <p><sup>d</sup> No NMED value available, value taken from Massachusetts Contingency Plan, 310 CMR 40.0985, 4/3/06.</p> <p><sup>e</sup> No NMED value available and leachability-based value for DAF = 1 or 20 not established in the Massachusetts Contingency Plan, 310 CMR 40.0985, 4/3/06.</p>				

#### References

Agency for Toxic Substances and Disease Registry (ATSDR). 1997. Toxicological Profile for Hydraulic fluids.

Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup and Office of Research and Standards. 1994. "Background Documentation for the Development of the MCP Numerical Standards."

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New Mexico Environment Department, Hazardous Waste Bureau and Groundwater Quality Bureau Voluntary Remediation Program. 2006. "Technical Background Document for Development of Soil Screening Levels." June 2006. Revision 4.0.

## Section 5.0 Groundwater Monitoring Results

<u>Title</u>	<u>Tab/Figure</u>	<u>Section</u>
Measured Depth to Groundwater.....	Tab 1,2,3.....	9.0
Groundwater Elevation and Flow Direction .....	Figures 4, 5, 6, 7, & 8.....	10.0
Product Thickness Map.....	Figures 9, 10, 11, &12.....	10.0
BTEX and MTBE Concentration Map.....	Appendix A..... Figures 13 & 14.....	10.0
Field Water Quality Measurements.....	Tab 4 .....	9.0
Comparison to Previous Monitoring.....	Tabs 5, 6, 7, 8, 9, 10, 11.....	9.0
Measured Depth to Groundwater North Barrier Wall.....	Appendix B..... Tabs 1 – 12.....	15.0
North Barrier Wall Analytical Data... ..	Appendix B..... Tabs 13, 14, 15.....	15.0

## Section 6.0 Chemical Analytical Data

Title	Tab	Section
Background Wells.....	Tab 5.....	9.0
Refinery Wells.....	Tab 6.....	9.0
Cross-gradient Wells.....	Tab 7.....	9.0
Downgradient Wells.....	Tab 8.....	9.0
San Juan River Bluff .....	Tab 9.....	9.0
Tank #33.....	Tab 10.....	9.0
San Juan River.....	Tab 11.....	9.0
North Barrier Wall.....	Tabs 13, 14, 15.....	Appendix B.....15.0

## **Section 7.0    Remediation System Monitoring**

# Remediation System Monitoring

## Total Fluids Pumping

The total fluids pumping system is used to bring SPH and hydrocarbon impacted groundwater to the surface for treatment or disposal. This is accomplished by pumping wells within the SPH plume and adjacent areas. The recovery wells pump SPH and hydrocarbon impacted groundwater to the refinery API separator and through the refinery process wastewater treatment system. Pumping is most effective in saturated zones with high hydraulic conductivities such as those measured at the refinery. In 2008 total fluids pumping was accomplished through the use of fourteen recovery wells: RW# 1, 2, 9, 14, 15, 16, 17, 18, 19, 22, 23, 28, 42 and 43.

In 2008 the estimated total gallons pumped (SPH and water) from the recovery wells was 1,390,000 gallons.

## North Boundary Barrier Wall

The North Boundary Barrier Wall and Collection System were completed in April of 2005. The primary purpose of the wall is to prevent the flow of hydrocarbon-impacted groundwater to reach the San Juan River. Water that reaches the Barrier Wall is consequently backed up into the French Drain and carried by 8" pipe to Tank 37 from which it is pumped to the API Separator. Collection wells are placed in the depressions or troughs of the Nacimiento Formation.

Using a vacuum truck, fluids were removed from the collection and observation wells on a 3 times per week basis until March 31, 2008. Total calculated volume for 2008 from the Observation wells (located on the north side of the slurry wall) is <200 gallons for the time they were vacuumed or <10 gallons per week. Total calculated volume removed from Collection wells (located on the south side of the slurry wall) is 7,128 gallons or 324 gallons per week. The formula used for calculating the amount of water pulled from each well is the following: Total Well Depth – Depth to Water X (Conversion Factor for Pipe Size) X 156 (Wells pulled 3X/week X 22 Weeks).

In January 2008, Bloomfield Refinery proposed to discontinue recovery operations using the vacuum truck and to begin using passive methods of separate phase removal in the observation wells. NMED responded with the letter *Approval with Direction Evaluation of Interim Measure* dated March 25, 2008 which allowed the cessation of fluids recovery from the Hammond Ditch wells.

Following the direction of Comment #2 of that letter, Bloomfield Refinery personnel collected depth to water and depth to product measurements from all observation well and collection wells, MW #45, and MW #47 twice a week for 90

days starting April 1, 2008. The collected data was submitted to NMED in the *Evaluation of Interim Measures* letter dated July, 15, 2008.

NMED, in conjunction with the Oil Conservation Division (OCD), replied to the submittal with their *Monitoring Requirements Evaluation of Interim Measures* letter dated September 2, 2008. Bloomfield Refinery personnel are continuing to collect depth to water and depth to product measurements from all observation well, MW #45, and MW #47 twice a week for six months starting October 1, 2008. The program will conclude on April 2, 2009.

Bloomfield Refinery personnel continued to monitor fluid levels on both sides of the barrier wall by measuring the depth to water and depth to product every other week. Measured depth to groundwater data from January 2008 through December 2008 is located in Appendix B, Section 15.0, Tabs 1 -12.

### **Hammond Ditch Recovery System**

The Hammond Ditch Recovery System consists of recovery Tank #37, which collects groundwater from two 8-inch influent lines connected to the perforated sub-drain (the French Drain) beneath the Hammond Irrigation Canal. The Tk #37 liquid level has a float control system and automatically pumps through a flow meter to the API Separator. The total volume pumped through the flow meter in 2008 was 23,421 barrels (983,682 gallons).

### **North Outfalls/Draws**

A bi-weekly visual inspection of Seeps 1-9 occurred through to March 2008. In April 2008 Bloomfield Refinery personnel began visually inspecting all seep locations on a weekly basis following the direction of Comment 2 in the NMED letter *Approval with Direction Facility-Wide Groundwater Monitoring Plan* dated March 25, 2008. Comment 2 also included a sampling schedule and criterion of seeps that contained water.

The vast majority of the fluids in the outfalls are from precipitation events. Water recovery at the seeps is dependant on whether the analytical results exceed any regulatory standards. If an exceedance occurs, that water will be pumped for recovery.

Inspections of the draws north of the barrier wall and analysis of samples of water collected in the seeps indicate that the barrier wall is preventing migration of contaminated groundwater toward the San Juan River. Since installation of the barrier wall, all previous areas where seepage of fuel hydrocarbon impacted water was present have been eliminated.

### **River Terrace**

The River Terrace Bioventing Project was put on-line in January 2006. Monitoring and remedial actions are following the Voluntary Measures Bioventing

Monitoring Plan that has been approved by NMED and are submitted in a separate report to the agencies.

### **East Outfall**

The east outfall is collected into a pipe, which flows to Tank #38 and then pumped to Tank #33 located just south of the western fresh water pond. Hydrocarbons are skimmed off the top of the tank into a secondary tank, which is emptied with a vacuum truck and taken to the API separator. The remaining water from Tank #33 is then piped to the fresh water pond. The total gallons pumped in 2008 were 11,213,824 gallons.

Tank #33 effluent analytical summary can be found in Section 9, Tab 10.0.

### **Overall System Capabilities**

The French Drain and the collection wells are in the same column of water. The French Drain removed 98.9% of the water south of the slurry wall. Vacuuming the Collection Wells three times per week only removed 1.1% of the water south of the slurry wall. The three month test results showed that not vacuuming the wells had very little effect on the water table and the removal of any residual SPH that remained on the north side of the slurry wall. The data collection phase of the six month test will be complete on April 2, 2009.

## **Section 8.0   Summary – Conclusions and Recommendations**



## Summary

### Compliance Monitoring

Measured depth to groundwater tables and analytical summaries are located in Section 9.0 of this report.

### Groundwater Measurements

Bloomfield Refinery personnel began a quarterly groundwater level measurement program in February 2008. All facility monitoring wells, recovery wells, observation and collection wells were measured for groundwater elevation in February and April. Recovery well pumps were shut off and the extraction of fluids ceased. Measurements of water and product levels were taken 48 hours after the cessation of fluid extraction. In August, refinery personnel followed the guidelines of the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)* to collect groundwater levels and SPH thickness measurements. Prior to annual groundwater sampling activities, water elevation measurements were collected in all wells while the recovery wells were in operation and again after the pumps were removed and water levels had stabilized (5 days later). October groundwater level procedures followed the protocol from the February and April program.

Wells have been segregated into four separate groups within the Refinery Complex. The background well group consists of MW #3, MW #5, and MW #6. The cross-gradient well list includes MW #1, MW #13, MW #26, MW #27, MW #32, and MW #33. The refinery area well group contains RW #1, MW #4, MW #8, RW #9, RW #15, RW #18, MW #20, MW #21, RW #23, RW #28, MW #29, MW #30, MW #31, RW #42, RW #43, and MW #44. The down-gradient well list consists of MW #11, MW #34, MW #35, MW #37, MW #38, and MW #12.

#### Background Wells

MW #5 and MW #6 were dry in February, April, August, and October. MW #3 was practically dry with fluid thickness levels of 0.48 feet to 0.6 feet throughout the year.

#### Refinery Wells

MW #4, MW #8, MW #29, MW #30, MW #31, MW #44, and RW #15 did not contain separate phase hydrocarbon (SPH) during any of the four measuring events. MW #40 was SPH-free for three measuring events but had a SPH reading of 0.03 feet in August. RW #23 contained SPH in the first three quarters but was SPH-free in October. RW #1 had an SPH measurement of 1.23 feet in February after the pump had been removed. Subsequent measurements in April, August, and October at RW #1 showed no SPH present in either pre or post recovery well operation.

MW #20, MW #21, RW #9, RW #18, RW #28, RW #42, and RW #43 contained SPH quantities in monitoring wells varied from a low of 0.01 feet (RW #9 – August) to a high of 0.55 feet (MW #20 – February).

#### Cross-Gradient Wells

MW #1, MW #13, MW #26, MW #27, MW #32, and MW #33 did not contain SPH during all four measuring events.

#### Down-Gradient Wells

There was no SPH present in MW #11, MW #12, MW #34, MW #35, MW #37, and MW #38 throughout 2008.

Figures 4, 5, 6, and 7 in Section 10.0 represent the groundwater elevation contours for the quarterly measuring events.

### **Groundwater Monitoring**

The facility-wide semi-annual monitoring event occurred during the week of April 7, 2008. Guidelines from the *Facility-Wide Groundwater Monitoring Plan (revised December 2007)* were followed. Annual sampling started the week of August 11, 2008. The *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)* was followed.

#### Background Wells

MW #5 and MW #6 were dry all through 2008. MW #3 was practically dry with fluid thickness levels of 0.48 feet to 0.6 feet throughout the year and consequently, no analytical samples were taken from these wells in 2008.

### **BTEX**

#### Refinery Wells

MW #8, MW #29, and MW #44 analytical results did not exceed regulatory standards for BTEX (Benzene, Toluene, Ethylbenzene, Xylene) and DRO (Diesel Range Organics) in 2008. MW #40 and RW #1 were over the benzene and DRO standards in August. MW #31 and RW #23 topped the benzene, ethylbenzene, and xylene regulatory values. RW #23 also exceeded the DRO standards. MW #4 surpassed limits on benzene, xylene, and DRO. RW #15 and MW #30 surpassed the BTEX and DRO standards. MW #20, MW #21, RW #9, RW #18, RW #28, RW #42, and RW #43 were not sampled since the wells contained separate phase hydrocarbon.

#### Cross-Gradient Wells

MW #26 benzene result of 0.12 mg/L exceeded the regulatory standard of 0.005 mg/L. The DRO result of 2.0 mg/L at MW #26 also surpassed the DRO regulatory limit of 1.72 mg/L. The analytical results from the other five wells (MW

#1, MW #13, MW #27, MW #32, and MW #33) in the Cross-Gradient list were either non-detect or did not surpass regulatory limits for BTEX and DRO.

#### Down-Gradient Wells

Analytical results from the six wells (MW #11, MW #12, MW #34, MW #35, MW #37, and MW #38) in the Down-Gradient list were either non-detect or did not surpass regulatory limits for BTEX. April sampling DRO results for MW #35 and MW #37 (2.1 mg/L and 2.3 mg/L respectively) exceeded the DRO regulatory limit of 1.72 mg/L. MW #11 and MW #34 surpassed DRO standards in August.

#### San Juan River Bluff – Bluff Seeps

Outfalls #2 and #3 analytical results did not exceed regulatory standards for BTEX. Samples collected from Seeps #1, #3, #6, #7, and #9 in either April or August (dependent upon fluids present) did not exceed BTEX regulatory standards.

#### General Chemistry

General chemistry parameters were analyzed during the annual sampling event in August and not in April 2008.

#### Refinery Wells

WQCC TDS standard (1000 mg/L) was exceeded by MW #4, MW #8, MW #30, MW #31, MW #40, MW #44, RW #15, and RW #23. The results ranged from a low of 1139 mg/L in RW #23 to a high of 4080 mg/L in MW #44. The sulfate standard (600 mg/L) was surpassed by MW #8 (790 mg/L) and MW #44 (3000 mg/L). The chloride standard (250 mg/L) was met or exceeded by MW #8, MW #31, MW #40, RW #1, and RW #15 with a low of 250 mg/L in RW #23 to a high of 740 mg/L in MW #31. The nitrogen standard (10 mg/L) was exceeded by MW #8 (24 mg/L).

#### Cross-Gradient Wells

MW #13, MW #26, MW #27, MW #32, and MW #33 exceeded the TDS standard with results that ranged from a low of 1973 mg/L at MW #27 to a high of 4364 mg/L at MW #32. The sulfate regulatory limit was surpassed by MW #13, MW #27, MW #32, and MW #33. Chloride standard was topped by results from MW #26, MW #32, and MW #33. The nitrogen standard (10 mg/L) was exceeded by MW #32 (26 mg/L) and MW #33 (19 mg/L).

#### Down-Gradient Wells

The TDS standard was exceeded by MW #11, MW #34, MW #35, and MW #37 with a range of 1225 mg/L (MW #34) to 1655 mg/L (MW #11). The sulfate regulatory limit (600 mg/L) was surpassed by MW #12 (830 mg/L),

#### San Juan River Bluff – Bluff Seeps

Outfall #2 exceeded sulfate regulatory limits as did Seeps #1, #3, and #6. The chloride standard (250 mg/L) was surpassed by Seeps #1, #3, and #6.

### **Total Metals (RCRA 8)**

Total Metals (RCRA 8) were analyzed only during the annual sampling event in August 2008 but not required during the April 2008 sampling event. Due to matrix interferences, the selenium reporting level on several samples is above the regulatory level of 0.05 mg/L. Hall Environmental Analytical Laboratory felt it was necessary to dilute the sample in order to accurately report selenium.

### **Refinery Wells**

All total metal constituents other than barium were either non-detect or below regulatory levels for the refinery wells. The barium standard of 1.0 mg/L was exceeded by MW #4 (1.3 mg/L), RW #1 (1.7 mg/L), RW #15 (1.2 mg/L), and MW #23 (1.4 mg/L).

### **Cross-Gradient Wells**

MW #26 surpassed the barium standard with a result of 2.3 mg/L. Total metals results from all other Cross-Gradient wells were either non-detect or below regulatory levels.

### **Down-Gradient Wells**

Down-Gradient wells analytical results did not exceed regulatory standards for total metals.

### **San Juan River Bluff – Bluff Seeps**

Outfalls #2 and #3 analytical results did not exceed regulatory standards for total metals. Total metals analysis was not required for any Seeps.

### **Dissolved Metals**

Samples collected in August 2008 were analyzed for WQCC dissolved metals. Dissolved metals analysis was not required for the April 2008 sampling event. The analytical laboratory inadvertently did not analyze for calcium, magnesium, potassium, and sodium from some samples collected during the annual sampling event. This issue has been addressed with the lab and corrected for future monitoring activities.

### **Refinery Wells**

MW 34, MW #40, RW #1, RW #15, and RW #23 exceeded barium (1.0 mg/L), iron (1.0 mg/L), and manganese (0.2 mg/L) regulatory limits. Barium exceedances ranged from a low of 1.2 mg/L (RW #15) to a high of 1.8 mg/L (MW #40). Iron varied from a low of 2.9 mg/L (RW #23) to a high of 9.6 mg/L (MW #4). Manganese results ranged from 2.5 mg/L to 4.6 mg/L. MW #29 (0.97 mg/L), MW #30 (1.7 mg/L), and MW #44 (1.7 mg/L) surpassed manganese standards. MW #31 went over barium (1.1 mg/L) and manganese (0.71 mg/L) regulatory levels.

### **Cross-Gradient Wells**

MW #13 topped manganese standards (0.2 mg/L) with a result of 1.4 mg/L. MW #26 exceeded barium, iron, and manganese regulatory levels with results of 2.3 mg/L, 6.9 mg/L, and 3.0 mg/L respectively. MW #27 surpassed iron and manganese standards with results of 1.5 mg/L and 4.6 mg/L respectively.

#### Down-Gradient Wells

MW #11, MW #34, MW #35, and MW #38 exceeded iron and manganese standards. Iron exceedances ranged from a low of 2.2 mg/L at MW #38 to a high of 12.0 mg/L at MW #11. Manganese varied from a low of 1.4 mg/L at MW #35 to a high of 3.1 at MW #34. MW #37 surpassed manganese with a result of 1.2 mg/L.

#### San Juan River Bluff – Bluff Seeps

Outfalls #2 and #3 analytical results did not exceed regulatory standards for total metals. Dissolved metals analysis was not required for any Seeps.

#### Semi-Volatile Organic Compounds

Samples were analyzed for SVOCs by EPA Method 8270 during the annual sampling event in August 2008.

#### Refinery Wells

MW #4, MW #30, MW #40, RW #1, RW #15, and RW #23 exceeded the naphthalene standard of 0.03 mg/L with range of 0.096 mg/L at MW #4 to a high of 1.5 mg/L at RW #23. RW #1 also surpassed the Bis(2-ethylexyl)phthalate standard of 0.048 mg/L with result of 0.051 mg/L.

#### Cross-Gradient Wells

MW #26 exceeded the naphthalene standard of 0.03 mg/L with a result of 0.06 mg/L.

#### Down-Gradient Wells

MW #11 exceeded the naphthalene standard of 0.03 mg/L with a result of 0.032 mg/L.

#### San Juan River Bluff – Bluff Seeps

SVOC analysis was not required for Outfalls #2 and #3. The Seeps analysis did not exceed laboratory reporting limit of any SVOC analyte.

### **North Boundary Barrier Wall**

#### **Seeps**

A bi-weekly visual inspection of Seeps 1-9 occurred through March 2008. In April 2008 Bloomfield Refinery personnel began visually inspecting all seep locations on a weekly basis following the direction of Comment 2 in the NMED letter *Approval with Direction Facility-Wide Groundwater Monitoring Plan* dated March

25, 2008. Visual inspection continues to confirm that the vast majority of the fluids in the outfalls are from precipitation events.

Before implementation of the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)* and during the week of April 15, 2008, semi-annual samples were collected from Seeps 1, 6, 7, and 9. During the week of August 11, 2008, samples were collected from Seeps 1, 3, and 6 and as required by the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)*. Analyses of these water samples indicate that BTEX volatile organic constituents are non-detect.

Analytical results can be found in Section 9.0, Tab 9.0.

### **Groundwater Measurements**

In August 2005 Bloomfield Refinery personnel established a bi-weekly fluid measurement scheme requiring monitoring of all observation and collection wells as well as MW #11, MW #12, MW #20, MW #21, MW #39, MW #45, MW #46, and MW #47. This measurement program continued throughout 2008. In conjunction with that program, Bloomfield Refinery personnel also followed guidelines from the NMED letter *Approval with Direction Evaluation of Interim Measure* dated March 25, 2008 which instructed additional fluid measurement from all observation wells and collection wells twice a week for 90 days starting April 1, 2008. The collected data was submitted to NMED in the *Evaluation of Interim Measures* letter dated July, 15, 2008.

NMED, in conjunction with the Oil Conservation Division (OCD), replied to the submittal with their *Monitoring Requirements Evaluation of Interim Measures* letter dated September 2, 2008. Bloomfield Refinery personnel are continuing to collect depth to water and depth to product measurements from all observation wells, MW #45, and MW #47 twice a week for six months starting October 1, 2008. The program will conclude on April 2, 2009. This data will be submitted in a separate document.

In February 2008 Bloomfield Refinery personnel began a facility-wide quarterly groundwater level measurement program which included all of the observation wells and collection wells. Groundwater elevation maps were developed using the data gathered in the quarterly measurement program. Data from that program will be discussed in this report.

Separate phase hydrocarbon (SPH) was detected in OW 1+50 in October (0.01 feet), April (0.20 feet), and February (0.02 feet). OW 3+85 had SPH present in April (0.43 feet) and February (0.01 feet). SPH was found in OW 11+15 in October (0.07 feet), August (0.45 feet), and April (0.07 feet). CW 8+45 had SPH present in all four quarters with levels ranging from 0.01 feet to 0.07 feet. OW 6+70, OW 8+1, and OW 14+10 were dry on all four quarters.

### **Groundwater Monitoring**

Semi-Annual sample collection began during the week of April 7, 2008. Annual sampling occurred the week of August 11, 2008. During both sampling events, groundwater samples were collected from all observation wells and two collection wells (CW-0+60 and CW25+95) with the exception of wells that contain separate phase hydrocarbon or wells that were dry or did not contain enough water to collect a sample.

April and August analytical data for CW 0+60 exceeded the benzene regulatory standard of 0.005 mg/L with results of 0.18 mg/L (April) and 0.047 mg/L (August). CW 0+60 surpassed the DRO regulatory limit of 1.72 mg/L in April only with a result of 5.3 mg/L. CW 25+95 sampling data did not exceed regulatory standards except in April for benzene with a result of 0.043 mg/L.

Every observation well that was sampled exceeded the TDS standard of 1000 mg/L. Results ranged from a low of 1055 mg/L at OW 23+90 (August) to a high of 3082 mg/L at OW 22+00 (April). The regulatory limits of benzene (0.005 mg/L), ethylbenzene (0.70 mg/L), and xylene (0.62 mg/L) were surpassed in OW 1+50 (August), OW 3+85(August), and OW 16+60 (April & August). Benzene data ranged from 0.076 mg/L (OW 1+50) to 2.3 mg/L (OW 16+60). Ethylbenzene ranged from 0.95 mg/L (OW 1+50) to 1.4 mg/L(OW 16+60). Xylene levels ranged from 0.98 mg/L (OW 16+60) to 6.7 mg/L (OW 1+50).The DRO regulatory standard of 1.72 mg/L was exceeded by OW 0+60, OW 1+50, OW 3+85, OW 16+60, OW 22+00, and OW 23+10. Results ranged from a low of 2.9 mg/L at OW 1+50 to a high of 34 mg/L at OW 16+60(April).

## **Remedial Action and Conclusions**

### **North Boundary Barrier Wall**

Visual inspection of Seeps 1-9 has shown ground water discharge from the seeps along the river bluff has decreased significantly since installation of the slurry wall. It now appears that only seeps #1, #6, #7, #8, and #9 have any actual discharge of ground water as opposed to apparent periodic accumulation of stormwater in the other seep basins. Weekly inspections continue to confirm that the vast majority of the fluids in the outfalls are from precipitation events.

Groundwater elevation maps indicate that the wall is performing as intended by capturing the water along the south side of the wall. Inspections of the draws north of the barrier wall and analysis of fluids collected at the seeps indicate that seepage of fuel hydrocarbon impacted water has been eliminated.

### **River Terrace**

The system was put on-line in January 2006. Monitoring and remedial actions are following the *Voluntary Measures Bioventing Monitoring Plan* that has been approved by NMED.

Monitoring results and conclusions were presented in the *River Terrace Bioventing Project Annual Report* submitted March 2009.

### **Facility-Wide Monitoring and Remedial Actions**

Future monitoring and remedial action will follow the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)*. As stated in 5.1.2 of the Monitoring Plan, consideration for on-going monitoring of total metals and SVOC analysis will be assessed for necessity during future monitoring events. SVOC analytical results were below the respective laboratory reporting limit on all of the analytes in 15 of the 22 wells sampled as well as Seeps #1, #3, and #6.



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## Quarterly Groundwater Elevations 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-01	10/6/2008	5519.21	21.56	NPP	16.92	5502.29	NPP
	8/6/2008	5519.21	21.56	NPP	17.08	5502.13	NPP
	4/8/2008	5519.21	21.56	NPP	17.15	5502.06	NPP
	2/25/2008	5519.21	21.56	NPP	16.98	5502.23	NPP
MW-03	10/6/2008	5539.27	36.75	NPP	36.15	5503.12	NPP
	8/6/2008	5539.27	36.75	NPP	36.27	5503.00	NPP
	4/8/2008	5539.27	36.75	NPP	36.15	5503.12	NPP
	2/25/2008	5539.27	36.75	NPP	36.15	5503.12	NPP
MW-04	10/6/2008	5527.78	30.48	NPP	27.49	5500.29	NPP
	8/6/2008	5527.78	30.48	NPP	27.09	5500.69	NPP
	4/9/2008	5527.78	30.48	NPP	26.95	5500.83	NPP
	2/25/2008	5527.78	30.48	NPP	27.17	5500.61	NPP
MW-05	10/6/2008	5548.56	37.2	NPP	NWP		NPP
	8/6/2008	5548.56	37.2	NPP	NWP		NPP
	4/9/2008	5548.56	37.2	NPP	NWP		NPP
	2/25/2008	5548.56	37.2	NPP	NWP		NPP
MW-06	10/6/2008	5554.61	48	NPP	NWP		NPP
	8/6/2008	5554.61	48	NPP	NWP		NPP
	4/9/2008	5554.61	48	NPP	NWP		NPP
	2/25/2008	5554.61	48	NPP	NWP		NPP
MW-07	10/6/2008	5527.66	62.61	NPP	27.39	5500.27	NPP
	8/6/2008	5527.66	62.61	NPP	27.35	5500.31	NPP
	4/9/2008	5527.66	62.61	NPP	26.94	5500.72	NPP
	2/25/2008	5527.66	62.61	NPP	27.09	5500.57	NPP
MW-08	10/6/2008	5534.58	35.93	NPP	31.61	5502.97	NPP
	8/6/2008	5534.58	35.93	NPP	31.76	5502.82	NPP
	4/8/2008	5534.58	35.93	NPP	31.61	5502.97	NPP
	2/25/2008	5534.58	35.93	NPP	31.48	5503.10	NPP
MW-11	10/6/2008	5510.31	22.94	NPP	10.83	5499.48	NPP
	8/6/2008	5510.31	22.94	NPP	11.23	5499.08	NPP
	4/7/2008	5510.31	22.94	NPP	11.13	5499.18	NPP
	2/25/2008	5510.31	22.94	NPP	10.58	5499.73	NPP

NPP = No Product Present

NWP = No Water Present

## Quarterly Groundwater Elevations 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-12	10/6/2008	5501.61	14.98	NPP	10.91	5490.70	NPP
	8/6/2008	5501.61	14.98	NPP	10.71	5490.90	NPP
	4/7/2008	5501.61	14.98	NPP	9.56	5492.05	NPP
	2/25/2008	5501.61	14.98	NPP	9.68	5491.93	NPP
MW-13	10/6/2008	5542.04	52.89	NPP	40.23	5501.81	NPP
	8/6/2008	5542.04	52.89	NPP	40.35	5501.69	NPP
	4/8/2008	5542.04	52.89	NPP	40.25	5501.79	NPP
	2/25/2008	5542.04	52.89	NPP	40.33	5501.71	NPP
MW-20	10/6/2008	5519.9	27.13	20.6	20.92	5499.24	0.32
	8/6/2008	5519.9	27.13	20.71	21.15	5499.10	0.44
	4/7/2008	5519.9	27.13	20.69	21.03	5499.14	0.34
	2/25/2008	5519.9	27.13	20.7	21.25	5499.09	0.55
MW-21	10/6/2008	5521.99	30.38	21.61	21.75	5500.35	0.14
	8/6/2008	5521.99	30.38	21.79	21.9	5500.18	0.11
	4/7/2008	5521.99	30.38	21.69	21.82	5500.27	0.13
	2/25/2008	5521.99	30.38	21.68	21.84	5500.28	0.16
MW-25	10/6/2008	5533.99	41.2	32.6	32.65	5501.38	0.05
	8/6/2008	5533.99	41.2	32.67	33.05	5501.24	0.38
	4/9/2008	5533.99	41.2	32.55	32.92	5501.37	0.37
	2/25/2008	5533.99	41.2	32.58	33.05	5501.32	0.47
MW-26	10/6/2008	5517.88	25.11	NPP	17.21	5500.67	NPP
	8/6/2008	5517.88	25.11	NPP	17.37	5500.51	NPP
	4/9/2008	5517.88	25.11	NPP	17.21	5500.67	NPP
	2/25/2008	5517.88	25.11	NPP	17.19	5500.69	NPP
MW-27	10/6/2008	5518.67	24.42	NPP	18.5	5500.17	NPP
	8/6/2008	5518.67	24.42	NPP	18.68	5499.99	NPP
	4/9/2008	5518.67	24.42	NPP	18.54	5500.13	NPP
	2/25/2008	5518.67	24.42	NPP	18.23	5500.44	NPP

NPP = No Product Present

NWP = No Water Present

## Quarterly Groundwater Elevations 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-29	10/6/2008	5524.97	28.62	NPP	22.88	5502.09	NPP
	8/6/2008	5524.97	28.62	NPP	23.06	5501.91	NPP
	4/9/2008	5524.97	28.62	NPP	22.92	5502.05	NPP
	2/25/2008	5524.97	28.62	NPP	22.8	5502.17	NPP
MW-30	10/6/2008	5536.83	40.13	NPP	33.73	5503.10	NPP
	8/6/2008	5536.83	40.13	NPP	33.85	5502.98	NPP
	4/8/2008	5536.83	40.13	NPP	33.74	5503.09	NPP
	2/25/2008	5536.83	40.13	NPP	33.73	5503.10	NPP
MW-31	10/6/2008	5536.24	39.16	NPP	33.89	5502.35	NPP
	8/6/2008	5536.24	39.16	NPP	34.01	5502.23	NPP
	4/9/2008	5536.24	39.16	NPP	33.9	5502.34	NPP
	2/25/2008	5536.24	39.16	NPP	34	5502.24	NPP
MW-32	10/6/2008	5525.64	27.51	NPP	24.91	5500.73	NPP
	8/6/2008	5525.64	27.51	NPP	25.04	5500.60	NPP
	4/9/2008	5525.64	27.51	NPP	24.92	5500.72	NPP
	2/25/2008	5525.64	27.51	NPP	24.88	5500.76	NPP
MW-33	10/6/2008	5521.79	25.51	NPP	22.15	5499.64	NPP
	8/6/2008	5521.79	25.51	NPP	22.31	5499.48	NPP
	4/8/2008	5521.79	25.51	NPP	22.2	5499.59	NPP
	2/25/2008	5521.79	25.51	NPP	22.2	5499.59	NPP
MW-34	10/6/2008	5511.63	20.96	NPP	13.86	5497.77	NPP
	8/6/2008	5511.63	20.96	NPP	14.01	5497.62	NPP
	4/9/2008	5511.63	20.96	NPP	13.76	5497.87	NPP
	2/25/2008	5511.63	20.96	NPP	13.75	5497.88	NPP
MW-35	10/6/2008	5518.95	26.45	NPP	22.01	5496.94	NPP
	8/6/2008	5518.95	26.45	NPP	22.13	5496.82	NPP
	4/8/2008	5518.95	26.45	NPP	22	5496.95	NPP
	2/25/2008	5518.95	26.45	NPP	21.95	5497.00	NPP
MW-36	10/6/2008	5516.95	23.26	NPP	20.52	5496.43	NPP
	8/6/2008	5516.95	23.26	NPP	20.71	5496.24	NPP
	4/9/2008	5516.95	23.26	NPP	20.63	5496.32	NPP
	2/25/2008	5516.95	23.26	NPP	20.44	5496.51	NPP

## Quarterly Groundwater Elevations 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-37	10/6/2008	5519.62	27.58	NPP	23.34	5496.28	NPP
	8/6/2008	5519.62	27.58	NPP	23.41	5496.21	NPP
	4/8/2008	5519.62	27.58	NPP	23.27	5496.35	NPP
	2/25/2008	5519.62	27.58	NPP	23.22	5496.40	NPP
MW-38	10/6/2008	5519.19	26.82	NPP	23.53	5495.66	NPP
	8/6/2008	5519.19	26.82	NPP	23.72	5495.47	NPP
	4/8/2008	5519.19	26.82	NPP	23.46	5495.73	NPP
	2/25/2008	5519.19	26.82	NPP	23.3	5495.89	NPP
MW-39	10/6/2008	5520.83	38.34	NPP	25.83	5495.00	NPP
	8/6/2008	5520.83	38.34	NPP	25.92	5494.91	NPP
	4/7/2008	5520.83	38.34	NPP	25.78	5495.05	NPP
	2/25/2008	5520.83	38.34	NPP	25.84	5494.99	NPP
MW-40	10/6/2008	5527.31	30.07	NPP	28.1	5499.21	NPP
	8/6/2008	5527.31	30.07	28.35	28.38	5498.95	0.03
	4/9/2008	5527.31	30.07	NPP	28.25	5499.06	NPP
	2/27/2008	5527.31	30.07	NPP	28.31	5499.00	NPP
MW-41	10/6/2008	5526.41	31.62	26.42	26.7	5499.93	0.28
	8/6/2008	5526.41	31.62	26.76	27.22	5499.56	0.46
	4/9/2008	5526.41	31.62	26.6	26.75	5499.78	0.15
	2/27/2008	5526.41	31.62	26.57	26.77	5499.80	0.20
MW-44	10/6/2008	5535.44	50.91	NPP	34.31	5501.13	NPP
	8/6/2008	5535.44	50.91	NPP	33.94	5501.50	NPP
	4/8/2008	5535.44	50.91	NPP	33.59	5501.85	NPP
	2/25/2008	5535.44	50.91	NPP	33.77	5501.67	NPP
MW-45	10/6/2008	5506.36	16.92	NPP	11.64	5494.72	NPP
	8/6/2008	5506.36	16.92	NPP	11.72	5494.64	NPP
	4/7/2008	5506.36	16.92	NPP	11.63	5494.73	NPP
	2/25/2008	5506.36	16.92	NPP	11.77	5494.59	NPP

NPP = No Product Present

NWP = No Water Present

## Quarterly Groundwater Elevations 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-46	10/6/2008	5504.65	10.39	NPP	NWP		NPP
	8/6/2008	5504.65	10.39	NPP	NWP		NPP
	4/7/2008	5504.65	10.39	NPP	NWP		NPP
	2/25/2008	5504.65	10.39	NPP	NWP		NPP
MW-47	10/6/2008	5506.77	14.28	NPP	11.87	5494.90	NPP
	8/6/2008	5506.77	14.28	12.68	13.3	5493.97	0.62
	4/7/2008	5506.77	14.28	12.57	12.68	5494.18	0.11
	2/25/2008	5506.77	14.28	12.58	12.68	5494.17	0.10
P-03	10/6/2008	5510.77	22.73	NPP	10	5500.77	NPP
	8/6/2008	5510.77	22.73	NPP	11.04	5499.73	NPP
	4/9/2008	5510.77	22.73	NPP	11.06	5499.71	NPP
	2/27/2008	5510.77	22.73	NPP	10.61	5500.16	NPP

NPP = No Product Present

NWP = No Water Present

# Recovery Well-Groundwater Elevation 4th Quarter 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
RW-01	10/6/2008	5529.34	40.8	NPP	34.1	5495.24	NPP
	10/8/2008	5529.34	40.8	NPP	31.85	5497.49	NPP
RW-02	10/6/2008	5526.94	35.86	28.7	30.35	5497.91	1.65
	10/8/2008	5526.94	35.86	27.15	27.31	5499.76	0.16
RW-03	10/6/2008	5520.35	34.57	NPP	21.73	5498.62	NPP
	10/8/2008	5520.35	34.57	NPP	21.46	5498.89	NPP
RW-09	10/6/2008	5523.21	34.04	27.1	27.18	5496.09	0.08
	10/8/2008	5523.21	34.04	25.11	25.15	5498.09	0.04
RW-14	10/6/2008	5537.5	41.94	NPP	35.46	5502.04	NPP
	10/8/2008	5537.5	41.94	NPP	34.98	5502.52	NPP
RW-15	10/6/2008	5536.83	43.43	NPP	36.33	5500.50	NPP
	10/8/2008	5536.83	43.43	NPP	35.43	5501.40	NPP
RW-16	10/6/2008	5535.45	41.48	NPP	34.67	5500.78	NPP
	10/8/2008	5535.45	41.48	NPP	34.37	5501.08	NPP
RW-17	10/6/2008	5533.84	41.89	NPP	33.73	5500.11	NPP
	10/8/2008	5533.84	41.89	NPP	31.57	5502.27	NPP
RW-18	10/6/2008	5529.38	37.58	NPP	35.08	5494.30	NPP
	10/8/2008	5529.38	37.58	34.4	34.8	5494.90	0.40
RW-19	10/6/2008	5530.51	36.64	NPP	30.72	5499.79	NPP
	10/8/2008	5530.51	36.64	NPP	30.39	5500.12	NPP
RW-22	10/6/2008	5524.44	35.6	25.86	27.9	5498.17	2.04
	10/8/2008	5524.44	35.6	25.55	25.6	5498.88	0.05
RW-23	10/6/2008	5521.38	35.53	NPP	30.38	5491.00	NPP
	10/8/2008	5521.38	35.53	NPP	23.49	5497.89	NPP
RW-28	10/6/2008	5527.93	36.99	29.1	29.47	5498.76	0.37
	10/8/2008	5527.93	36.99	29.02	29.05	5498.90	0.03
RW-42	10/6/2008	5527.48	32.02	26.42	26.61	5501.02	0.19
	10/8/2008	5527.48	32.02	25.85	26	5501.60	0.15
RW-43	10/6/2008	5515.74	24.03	21.33	21.4	5494.40	0.07
	10/8/2008	5515.74	24.03	21.19	21.24	5494.54	0.05

NPP = No Product Present

NWP = No Water Present

# Recovery Well-Groundwater Elevation 3rd Quarter 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
RW-01	8/6/2008	5529.34	40.8	NPP	33.15	5496.19	NPP
	8/11/2008	5529.34	40.8	NPP	30.92	5498.42	NPP
RW-02	8/6/2008	5526.94	35.86	27.04	27.32	5499.84	0.28
	8/11/2008	5526.94	35.86	26.11	27.03	5500.65	0.92
RW-03	8/6/2008	5520.35	34.57	22.12	22.2	5498.21	0.08
	8/11/2008	5520.35	34.57	NPP	21.57	5498.78	NPP
RW-09	8/6/2008	5523.21	34.04	28	28.09	5495.19	0.09
	8/11/2008	5523.21	34.04	24.83	24.84	5498.38	0.01
RW-14	8/6/2008	5537.5	41.94	NPP	35.34	5502.16	NPP
	8/11/2008	5537.5	41.94	NPP	34.94	5502.56	NPP
RW-15	8/6/2008	5536.83	43.43	NPP	35.51	5501.32	NPP
	8/11/2008	5536.83	43.43	NPP	34.67	5502.16	NPP
RW-16	8/6/2008	5535.45	41.48	NPP	35	5500.45	NPP
	8/11/2008	5535.45	41.48	NPP	33.73	5501.72	NPP
RW-17	8/6/2008	5533.84	41.89	NPP	34.59	5499.25	NPP
	8/11/2008	5533.84	41.89	NPP	32.61	5501.23	NPP
RW-18	8/6/2008	5529.38	37.58	NPP	34.98	5494.40	NPP
	8/11/2008	5529.38	37.58	33.95	33.97	5495.43	0.02
RW-19	8/6/2008	5530.51	36.64	30.19	30.2	5500.32	0.01
	8/11/2008	5530.51	36.64	NPP	29.88	5500.63	NPP
RW-22	8/6/2008	5524.44	35.6	26.02	27.06	5498.21	1.04
	8/11/2008	5524.44	35.6	NPP	25.52	5498.92	NPP
RW-23	8/6/2008	5521.38	35.53	30.72	30.73	5490.66	0.01
	8/11/2008	5521.38	35.53	NPP	22.91	5498.47	NPP
RW-28	8/6/2008	5527.93	36.99	29.22	29.35	5498.68	0.13
	8/11/2008	5527.93	36.99	28.94	29.13	5498.95	0.19
RW-42	8/6/2008	5527.48	32.02	27.15	27.17	5500.33	0.02
	8/11/2008	5527.48	32.02	26.65	26.78	5500.80	0.13
RW-43	8/6/2008	5515.74	24.03	21.51	21.54	5494.22	0.03
	8/11/2008	5515.74	24.03	20.55	20.68	5495.16	0.13

NPP = No Product Present

NWP = No Water Present



# Recovery Well-Groundwater Elevation 2nd Quarter 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
RW-01	4/8/2008	5529.34	40.8	NPP	33.4	5495.94	NPP
	4/10/2008	5529.34	40.8	NPP	31	5498.34	NPP
RW-02	4/8/2008	5526.94	35.86	31.21	31.24	5495.72	0.03
	4/10/2008	5526.94	35.86	26.22	26.24	5500.72	0.02
RW-03	4/8/2008	5520.35	34.57	22.12	22.25	5498.20	0.13
	4/10/2008	5520.35	34.57	22.02	22.09	5498.32	0.07
RW-09	4/8/2008	5523.21	34.04	27.84	27.86	5495.37	0.02
	4/10/2008	5523.21	34.04	NPP	25.05	5498.16	NPP
RW-14	4/8/2008	5537.5	41.94	NPP	35.42	5502.08	NPP
	4/10/2008	5537.5	41.94	NPP	34.86	5502.64	NPP
RW-15	4/8/2008	5536.83	43.43	NPP	35.56	5501.27	NPP
	4/10/2008	5536.83	43.43	NPP	34.57	5502.26	NPP
RW-16	4/8/2008	5535.45	41.48	NPP	37	5498.45	NPP
	4/10/2008	5535.45	41.48	NPP	33.56	5501.89	NPP
RW-17	4/8/2008	5533.84	41.89	Unable to measure - Pump stuck in the well			
	4/10/2008	5533.84	41.89	Unable to measure - Pump stuck in the well			
RW-18	4/8/2008	5529.38	37.58	NPP	34.98	5494.40	NPP
	4/10/2008	5529.38	37.58	34.44	34.47	5494.93	0.03
RW-19	4/8/2008	5530.51	36.64	29.95	30.25	5500.50	0.30
	4/10/2008	5530.51	36.64	29.95	30.25	5500.50	0.30
RW-22	4/8/2008	5524.44	35.6	NPP	26.29	5498.15	NPP
	4/10/2008	5524.44	35.6	NPP	25.54	5498.90	NPP
RW-23	4/8/2008	5521.38	35.53	24.5	25.01	5496.78	0.51
	4/10/2008	5521.38	35.53	23.3	23.34	5498.07	0.04
RW-28	4/8/2008	5527.93	36.99	29.18	29.22	5498.74	0.04
	4/10/2008	5527.93	36.99	28.84	28.91	5499.08	0.07
RW-42	4/8/2008	5527.48	32.02	27.08	27.1	5500.40	0.02
	4/10/2008	5527.48	32.02	27.02	27.03	5500.46	0.01
RW-43	4/8/2008	5515.74	24.03	21.55	21.58	5494.18	0.03
	4/10/2008	5515.74	24.03	20.62	20.68	5495.11	0.06

NPP = No Product Present

NWP = No Water Present

# Recovery Well-Groundwater Elevation 1st QTR 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
RW-01	2/27/2008	5529.34	40.8	NPP	33.35	5495.99	NPP
	2/29/2008	5529.34	40.8	30.12	31.35	5498.97	1.23
RW-02	2/27/2008	5526.94	35.86	25.85	30	5500.26	4.15
	2/29/2008	5526.94	35.86	26.02	27	5500.72	0.98
RW-03	2/27/2008	5520.35	34.57	NPP	21.95	5498.40	NPP
	2/29/2008	5520.35	34.57	NPP	21.95	5498.40	NPP
RW-09	2/27/2008	5523.21	34.04	26.32	26.5	5496.85	0.18
	2/29/2008	5523.21	34.04	NPP	25.04	5498.17	NPP
RW-14	2/27/2008	5537.5	41.94	34.96	34.97	5502.54	0.01
	2/29/2008	5537.5	41.94	34.98	35	5502.52	0.02
RW-15	2/27/2008	5536.83	43.43	NPP	35.63	5501.20	NPP
	2/29/2008	5536.83	43.43	34.56	34.56	5502.27	0.00
RW-16	2/27/2008	5535.45	41.48	NPP	34.87	5500.58	NPP
	2/29/2008	5535.45	41.48	NPP	33.63	5501.82	NPP
RW-17	2/27/2008	5533.84	41.89	NPP	34.32	5499.52	NPP
	2/29/2008	5533.84	41.89	NPP	32.89	5500.95	NPP
RW-18	2/27/2008	5529.38	37.58	NPP	33.9	5495.48	NPP
	2/29/2008	5529.38	37.58	32.6	32.75	5496.75	0.15
RW-19	2/27/2008	5530.51	36.64	NPP	32.82	5497.69	NPP
	2/29/2008	5530.51	36.64	30.07	30.08	5500.44	0.01
RW-22	2/27/2008	5524.44	35.6	NPP	26.04	5498.40	NPP
	2/29/2008	5524.44	35.6	NPP	25.64	5498.80	NPP
RW-23	2/27/2008	5521.38	35.53	24.41	27	5496.45	2.59
	2/29/2008	5521.38	35.53	NPP	23.43	5497.95	NPP
RW-28	2/27/2008	5527.93	36.99	29.21	29.24	5498.71	0.03
	2/29/2008	5527.93	36.99	29.21	29.31	5498.70	0.10
RW-42	2/27/2008	5527.48	32.02	27.17	27.24	5500.30	0.07
	2/29/2008	5527.48	32.02	NPP	27.09	5500.39	NPP
RW-43	2/27/2008	5515.74	24.03	21.37	21.42	5494.36	0.05
	2/29/2008	5515.74	24.03	NPP	21.4	5494.34	NPP

NPP = No Product Present

NWP = No Water Present

## Observation Well Fluids Monitoring

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	10/6/2008	5506.62	12.26	NPP	10.97	5495.65	NPP
	8/11/2008	5506.62	12.26	NPP	11.19	5495.43	NPP
	4/7/2008	5506.62	12.26	NPP	11.66	5494.96	NPP
	2/25/2008	5506.62	12.26	NPP	11.55	5495.07	NPP
OW 1+50	10/6/2008	5508.03	14.36	12.85	12.86	5495.18	0.01
	8/11/2008	5508.03	14.36	NPP	12.65	5495.38	NPP
	4/7/2008	5508.03	14.36	13.60	13.80	5494.39	0.20
	2/25/2008	5508.03	14.36	13.64	13.66	5494.39	0.02
OW 3+85	10/6/2008	5507.31	15.06	NPP	12.42	5494.89	NPP
	8/11/2008	5507.31	15.06	NPP	12.27	5495.04	NPP
	4/7/2008	5507.31	15.06	13.01	13.44	5494.21	0.43
	2/25/2008	5507.31	15.06	13.12	13.13	5494.19	0.01
OW 5+50	10/6/2008	5507.59	13.67	NPP	13.18	5494.41	NPP
	8/11/2008	5507.59	13.67	NPP	13.52	5494.07	NPP
	4/7/2008	5507.59	13.67	NPP	13.51	5494.08	NPP
	2/25/2008	5507.59	13.67	NPP	13.70	5493.89	NPP
OW 6+70	10/6/2008	5504.78	14.67	NPP	DRY		NPP
	8/11/2008	5504.78	14.67	NPP	DRY		NPP
	4/7/2008	5504.78	14.67	NPP	DRY		NPP
	2/25/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	10/6/2008	5506.53	15.99	NPP	DRY		NPP
	8/11/2008	5506.53	15.99	NPP	DRY		NPP
	4/7/2008	5506.53	15.99	NPP	DRY		NPP
	2/25/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+ 15	10/6/2008	5506.70	16.59	12.25	12.32	5494.44	0.07
	8/11/2008	5506.70	16.59	12.24	12.69	5494.37	0.45
	4/7/2008	5506.70	16.59	11.35	11.42	5495.34	0.07
	2/25/2008	5506.70	16.59	NPP	12.50	5494.20	NPP

NPP = No Product Present

NWP = No Water Present

## Observation Well Fluids Monitoring

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 14+ 10	10/6/2008	5508.14	12.96	NPP	DRY		NPP
	8/11/2008	5508.14	12.96	NPP	DRY		NPP
	4/7/2008	5508.14	12.96	NPP	DRY		NPP
	2/25/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+ 60	10/6/2008	5508.14	12.96	NPP	DRY		NPP
	8/11/2008	5508.43	15.21	NPP	12.78	5495.65	NPP
	4/7/2008	5508.43	15.21	NPP	12.28	5496.15	NPP
	2/25/2008	5508.43	15.21	NPP	12.60	5495.83	NPP
OW 19+ 50	10/6/2008	5508.03	13.00	NPP	11.63	5496.40	NPP
	8/11/2008	5508.03	13.00	NPP	12.89	5495.14	NPP
	4/7/2008	5508.03	13.00	NPP	11.55	5496.48	NPP
	2/11/2008	5508.03	13.00	NPP	11.79	5496.24	NPP
OW 22+ 00	10/6/2008	5506.91	14.16	NPP	11.45	5495.46	NPP
	8/11/2008	5506.91	14.16	NPP	10.23	5496.68	NPP
	4/7/2008	5506.91	14.16	NPP	11.57	5495.34	NPP
	2/25/2008	5506.91	14.16	NPP	11.08	5495.83	NPP
OW 23+ 10	10/6/2008	5514.12	18.34	NPP	16.17	5497.95	NPP
	8/11/2008	5514.12	18.34	NPP	15.69	5498.43	NPP
	4/7/2008	5514.12	18.34	NPP	16.22	5497.90	NPP
	2/25/2008	5514.12	18.34	NPP	16.19	5497.93	NPP
OW 23+ 90	10/6/2008	5515.18	18.01	NPP	17.05	5498.13	NPP
	8/11/2008	5515.18	18.01	NPP	16.69	5498.49	NPP
	4/7/2008	5515.18	18.01	NPP	17.04	5498.14	NPP
	2/25/2008	5515.18	18.01	NPP	17.04	5498.14	NPP
OW 25+ 70	10/6/2008	5509.00	13.98	NPP	10.68	5498.32	NPP
	8/11/2008	5509.00	13.98	NPP	10.40	5498.60	NPP
	4/7/2008	5509.00	13.98	NPP	10.68	5498.32	NPP
	2/25/2008	5509.00	13.98	NPP	10.73	5498.27	NPP

NPP = No Product Present

NWP = No Water Present

# Collection Well Fluids Monitoring

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	10/6/2008	5506.68	14.09	NPP	8.24	5498.44	NPP
	8/11/2008	5506.68	14.09	NPP	8.04	5498.64	NPP
	4/7/2008	5506.68	14.09	NPP	8.59	5498.09	NPP
	2/25/2008	5506.68	14.09	NPP	8.39	5498.29	NPP
CW 1+50	10/6/2008	5505.13	13.74	NPP	6.85	5498.28	NPP
	8/11/2008	5505.13	13.74	NPP	6.75	5498.38	NPP
	4/7/2008	5505.13	13.74	NPP	7.11	5498.02	NPP
	2/25/2008	5505.13	13.74	NPP	7.08	5498.05	NPP
CW 3+85	10/6/2008	5503.87	13.11	NPP	5.62	5498.25	NPP
	8/11/2008	5503.87	13.11	NPP	5.58	5498.29	NPP
	4/7/2008	5503.87	13.11	NPP	5.77	5498.10	NPP
	2/25/2008	5503.87	13.11	NPP	5.83	5498.04	NPP
CW 5+50	10/6/2008	5503.76	12.27	NPP	6.31	5497.45	NPP
	8/11/2008	5503.76	12.27	NPP	6.26	5497.50	NPP
	4/7/2008	5503.76	12.27	NPP	6.43	5497.33	NPP
	2/25/2008	5503.76	12.27	NPP	6.4	5497.36	NPP
CW 6+70	10/6/2008	5503.84	11.45	NPP	6.69	5497.15	NPP
	8/11/2008	5503.84	11.45	NPP	6.62	5497.22	NPP
	4/7/2008	5503.84	11.45	NPP	6.76	5497.08	NPP
	2/25/2008	5503.84	11.45	NPP	6.77	5497.07	NPP
CW 8+10	10/6/2008	5504.02	11.63	NPP	7.43	5496.59	NPP
	8/11/2008	5504.02	11.63	NPP	7.46	5496.56	NPP
	4/7/2008	5504.02	11.63	NPP	7.66	5496.36	NPP
	2/25/2008	5504.02	11.63	NPP	7.83	5496.19	NPP
CW 8+45	10/6/2008	5503.80	12.6	7.53	7.54	5496.27	0.01
	8/11/2008	5503.80	12.6	7.50	7.51	5496.30	0.01
	4/7/2008	5503.80	12.6	7.63	7.64	5496.17	0.01
	2/25/2008	5503.80	12.6	7.80	7.87	5495.99	0.07

NPP = No Product Present

NWP = No Water Present

## Collection Well Fluids Monitoring

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 11+ 15	10/6/2008	5503.95	12.27	NPP	6.00	5497.95	NPP
	8/11/2008	5503.95	12.27	NPP	6.07	5497.88	NPP
	4/7/2008	5503.95	12.27	NPP	5.98	5497.97	NPP
	2/25/2008	5503.95	12.27	NPP	6.07	5497.88	NPP
CW 14+ 10	10/6/2008	5504.39	13.05	NPP	6.47	5497.92	NPP
	8/11/2008	5504.39	13.05	NPP	6.37	5498.02	NPP
	4/7/2008	5504.39	13.05	NPP	6.36	5498.03	NPP
	2/25/2008	5504.39	13.05	NPP	6.43	5497.96	NPP
CW 16+ 60	10/6/2008	5504.32	12.86	NPP	6.3	5498.02	NPP
	8/11/2008	5504.32	12.86	NPP	6.17	5498.15	NPP
	4/7/2008	5504.32	12.86	NPP	6.25	5498.07	NPP
	2/25/2008	5504.32	12.86	NPP	6.28	5498.04	NPP
CW 19+ 50	10/6/2008	5504.52	9.99	NPP	6.07	5498.45	NPP
	8/11/2008	5504.52	9.99	NPP	6.00	5498.52	NPP
	4/7/2008	5504.52	9.99	NPP	6.53	5497.99	NPP
	2/25/2008	5504.52	9.99	NPP	6.51	5498.01	NPP
CW 22+ 00	10/6/2008	5508.04	12.34	NPP	8.92	5499.12	NPP
	8/11/2008	5508.04	12.34	NPP	8.88	8.88	NPP
	4/7/2008	5508.04	12.34	NPP	9.00	5499.04	NPP
	2/25/2008	5508.04	12.34	NPP	8.97	5499.07	NPP
CW 23+ 10	10/6/2008	5510.04	14.65	NPP	10.6	5499.44	NPP
	8/11/2008	5510.04	14.65	NPP	10.53	5499.51	NPP
	4/7/2008	5510.04	14.65	NPP	10.65	5499.39	NPP
	2/25/2008	5510.04	14.65	NPP	10.6	5499.44	NPP
CW 23+ 90	10/6/2008	5507.32	11.72	NPP	8.06	5499.26	NPP
	8/11/2008	5507.32	11.72	NPP	8.00	5499.32	NPP
	4/7/2008	5507.32	11.72	NPP	8.14	5499.18	NPP
	2/25/2008	5507.32	11.72	NPP	8.10	5499.22	NPP
CW 25+ 95	10/6/2008	5505.90	12.25	NPP	7.13	5498.77	NPP
	8/11/2008	5505.90	12.25	NPP	7.08	5498.82	NPP
	4/7/2008	5505.90	12.25	NPP	7.15	5498.75	NPP
	2/25/2008	5505.90	12.25	NPP	7.15	5498.75	NPP

NPP = No Product Present

NWP = No Water Present

**Groundwater Elevation - 3rd Quarter**  
(Pre and Post Recovery Well Operation)

Date	Well ID	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
8/6/2008	MW-01	5519.21	21.56	NPP	17.08	5502.13	NPP
8/11/2008		5519.21	21.56	NPP	16.92	5502.29	NPP
8/6/2008	MW-03	5539.27	36.75	NPP	36.27	5503.00	NPP
8/11/2008		5539.27	36.75	NPP	36.27	5503.00	NPP
8/6/2008	MW-04	5527.78	30.48	NPP	27.09	5500.69	NPP
8/11/2008		5527.78	30.48	NPP	27.03	5500.75	NPP
8/6/2008	MW-05	5548.56	37.2	NPP	dry		NPP
8/11/2008		5548.56	37.2	NPP	dry		NPP
8/6/2008	MW-06	5554.61	48	NPP	dry		NPP
8/11/2008		5554.61	48	NPP	dry		NPP
8/6/2008	MW-07	5527.66	62.61	NPP	27.35	5500.31	NPP
8/11/2008		5527.66	62.61	NPP	27.34	5500.32	NPP
8/6/2008	MW-08	5534.58	35.93	NPP	31.76	5502.82	NPP
8/11/2008		5534.58	35.93	NPP	31.65	5502.93	NPP
8/6/2008	MW-11	5510.31	22.94	NPP	11.23	5499.08	NPP
8/11/2008		5510.31	22.94	NPP	10.46	5499.85	NPP
8/6/2008	MW-12	5501.61	14.98	NPP	10.71	5490.90	NPP
8/11/2008		5501.61	14.98	NPP	10.28	5491.33	NPP
8/6/2008	MW-13	5542.04	52.89	NPP	40.35	5501.69	NPP
8/11/2008		5542.04	52.89	NPP	40.36	5501.68	NPP
8/6/2008	MW-20	5519.9	27.13	20.71	21.15	5499.10	0.44
8/11/2008		5519.9	27.13	20.67	21.08	5499.15	0.41
8/6/2008	MW-21	5521.99	30.38	21.79	21.9	5500.18	0.11
8/11/2008		5521.99	30.38	21.52	21.68	5500.44	0.16
8/6/2008	MW-25	5533.99	41.2	32.67	33.05	5501.24	0.38
8/11/2008		5533.99	41.2	32.65	33.04	5501.26	0.39
8/6/2008	MW-26	5517.88	25.11	NPP	17.37	5500.51	NPP
8/11/2008		5517.88	25.11	NPP	17.21	5500.67	NPP
8/6/2008	MW-27	5518.67	24.42	NPP	18.68	5499.99	NPP
8/11/2008		5518.67	24.42	NPP	18.13	5500.54	NPP

NPP = No Product Present

NWP = No Water Present

**Groundwater Elevation - 3rd Quarter**  
(Pre and Post Recovery Well Operation)

Date	Well ID	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
8/6/2008	MW-29	5524.97	28.62	NPP	23.06	5501.91	NPP
8/11/2008		5524.97	28.62	NPP	22.8	5502.17	NPP
8/6/2008	MW-30	5536.83	40.13	NPP	33.85	5502.98	NPP
8/11/2008		5536.83	40.13	NPP	33.85	5502.98	NPP
8/6/2008	MW-31	5536.24	39.16	NPP	34.01	5502.23	NPP
8/11/2008		5536.24	39.16	NPP	34.01	5502.23	NPP
8/6/2008	MW-32	5525.64	27.51	NPP	25.04	5500.60	NPP
8/11/2008		5525.64	27.51	NPP	24.97	5500.67	NPP
8/6/2008	MW-33	5521.79	25.51	NPP	22.31	5499.48	NPP
8/11/2008		5521.79	25.51	NPP	22.25	5499.54	NPP
8/6/2008	MW-34	5511.63	20.96	NPP	14.01	5497.62	NPP
8/11/2008		5511.63	20.96	NPP	13.36	5498.27	NPP
8/6/2008	MW-35	5518.95	26.45	NPP	22.13	5496.82	NPP
8/11/2008		5518.95	26.45	NPP	21.98	5496.97	NPP
8/6/2008	MW-36	5516.95	23.26	NPP	20.71	5496.24	NPP
8/11/2008		5516.95	23.26	NPP	20.37	5496.58	NPP
8/6/2008	MW-37	5519.62	27.58	NPP	23.41	5496.21	NPP
8/11/2008		5519.62	27.58	NPP	23.37	5496.25	NPP
8/6/2008	MW-38	5519.19	26.82	NPP	23.72	5495.47	NPP
8/11/2008		5519.19	26.82	NPP	23.53	5495.66	NPP
8/6/2008	MW-39	5520.83	38.34	NPP	25.92	5494.91	NPP
8/11/2008		5520.83	38.34	NPP	25.85	5494.98	NPP
8/6/2008	MW-40	5527.31	30.07	28.35	28.38	5498.95	0.03
8/11/2008		5527.31	30.07	NPP	25.25	5502.06	NPP
8/6/2008	MW-41	5526.41	31.62	26.76	27.22	5499.56	0.46
8/11/2008		5526.41	31.62	26.63	27.07	5499.69	0.44
8/6/2008	MW-44	5535.44	50.91	NPP	33.94	5501.50	NPP
8/11/2008		5535.44	50.91	NPP	33.91	5501.53	NPP
8/6/2008	MW-45	5506.36	16.92	NPP	11.72	5494.64	NPP
8/11/2008		5506.36	16.92	NPP	11.64	5494.72	NPP

NPP = No Product Present

NWP = No Water Present



**Groundwater Elevation - 3rd Quarter**  
(Pre and Post Recovery Well Operation)

Date	Well ID	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
8/6/2008	MW-46	5504.65	10.39	NPP	dry		NPP
8/11/2008		5504.65	10.39	NPP	9.36	5495.29	NPP
8/6/2008	MW-47	5506.77	14.28	12.68	13.3	5493.97	0.62
8/11/2008		5506.77	14.28	NPP	11.67	5495.10	NPP
8/6/2008	P-03	5510.77	22.73	NPP	11.04	5499.73	NPP
8/11/2008		5510.77	22.73	NPP	9.62	5501.15	NPP
8/6/2008	RW-01	5529.34	40.8	NPP	33.15	5496.19	NPP
8/11/2008		5529.34	40.8	NPP	30.92	5498.42	NPP
8/6/2008	RW-02	5526.94	35.86	27.04	27.32	5499.84	0.28
8/11/2008		5526.94	35.86	26.11	27.03	5500.65	0.92
8/6/2008	RW-03	5520.35	34.57	22.12	22.2	5498.21	0.08
8/11/2008		5520.35	34.57	NPP	21.57	5498.78	NPP
8/6/2008	RW-09	5523.21	34.04	28	28.09	5495.19	0.09
8/11/2008		5523.21	34.04	24.83	24.84	5498.38	0.01
8/6/2008	RW-14	5537.5	41.94	NPP	35.34	5502.16	NPP
8/11/2008		5537.5	41.94	NPP	34.94	5502.56	NPP
8/6/2008	RW-15	5536.83	43.43	NPP	35.51	5501.32	NPP
8/11/2008		5536.83	43.43	NPP	34.67	5502.16	NPP
8/6/2008	RW-16	5535.45	41.48	NPP	35	5500.45	NPP
8/11/2008		5535.45	41.48	NPP	33.73	5501.72	NPP
8/6/2008	RW-17	5533.84	41.89	NPP	34.59	5499.25	NPP
8/11/2008		5533.84	41.89	NPP	32.61	5501.23	NPP
8/6/2008	RW-18	5529.38	37.58	NPP	34.98	5494.40	NPP
8/11/2008		5529.38	37.58	33.95	33.97	5495.43	0.02
8/6/2008	RW-19	5530.51	36.64	30.19	30.2	5500.32	0.01
8/11/2008		5530.51	36.64	NPP	29.88	5500.63	NPP

NPP = No Product Present

NWP = No Water Present

**Groundwater Elevation - 3rd Quarter**  
(Pre and Post Recovery Well Operation)

Date	Well ID	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
8/6/2008	RW-22	5524.44	35.6	26.02	27.06	5498.21	1.04
8/11/2008		5524.44	35.6	NPP	25.52	5498.92	NPP
8/6/2008	RW-23	5521.38	35.53	30.72	30.73	5490.66	0.01
8/11/2008		5521.38	35.53	NPP	22.91	5498.47	NPP
8/6/2008	RW-28	5527.93	36.99	29.22	29.35	5498.68	0.13
8/11/2008		5527.93	36.99	28.94	29.13	5498.95	0.19
8/6/2008	RW-42	5527.48	32.02	27.15	27.17	5500.33	0.02
8/11/2008		5527.48	32.02	26.65	26.78	5500.80	0.13
8/6/2008	RW-43	5515.74	24.03	21.51	21.54	5494.22	0.03
8/11/2008		5515.74	24.03	20.55	20.68	5495.16	0.13

NPP = No Product Present

NWP = No Water Present

# Sump Well Fluids Monitoring Jan. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	1/14/2008	5508.27	53.08	NPP	DRY		NPP
	1/28/2008	5508.27	53.08	NPP	DRY		NPP
SW2-0206	1/14/2008	5507.75	27.69	NPP	DRY		NPP
	1/28/2008	5507.75	27.69	NPP	DRY		NPP
SW3-0206	1/14/2008	5505.29	52.56	NPP	26.51	5478.78	NPP
	1/28/2008	5505.29	52.56	NPP	26.24	5479.05	NPP
SW4-0206	1/14/2008	5504.45	42.34	NPP	33.13	5471.32	NPP
	1/28/2008	5504.45	42.34	NPP	33.33	5471.12	NPP
SW5-0206	1/14/2008	5514.34	52.24	33.98	34.03	5480.35	0.05
	1/28/2008	5514.34	52.24	NPP	33.79	5480.55	NPP
SW6-0206	1/14/2008	5519.72	47.41	NPP	45.96	5473.76	NPP
	1/28/2008	5519.72	47.41	NPP	45.55	5474.17	NPP
SW7-0206	1/14/2008	5517.63	32.95	NPP	21.32	5496.31	NPP
	1/28/2008	5517.63	32.95	NPP	21.55	5496.08	NPP

NPP = No Product Present    NWP = No Water Present

# Sump Well Fluids Monitoring Feb. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	2/11/2008	5508.27	53.08	NPP	DRY		NPP
	2/25/2008	5508.27	53.08	NPP	DRY		NPP
SW2-0206	2/11/2008	5507.75	27.69	NPP	DRY		NPP
	2/25/2008	5507.75	27.69	NPP	DRY		NPP
SW3-0206	2/11/2008	5505.29	52.56	NPP	26.68	5478.61	NPP
	2/25/2008	5505.29	52.56	NPP	27.01	5478.28	NPP
SW4-0206	2/11/2008	5504.45	42.34	NPP	40.76	5463.69	NPP
	2/25/2008	5504.45	42.34	NPP	41.18	5463.27	NPP
SW5-0206	2/11/2008	5514.34	52.24	NPP	33.82	5480.52	NPP
	2/25/2008	5514.34	52.24	NPP	33.68	5480.66	NPP
SW6-0206	2/11/2008	5519.72	47.41	NPP	45.69	5474.03	NPP
	2/25/2008	5519.72	47.41	NPP	43.54	5476.18	NPP
SW7-0206	2/11/2008	5517.63	32.95	NPP	22.12	5495.51	NPP
	2/25/2008	5517.63	32.95	NPP	22.34	5495.29	NPP

NPP = No Product Present · NWP = No Water Present

# Sump Well Fluids Monitoring Mar. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	3/10/2008	5508.27	53.08	NPP	DRY		NPP
	3/24/2008	5508.27	53.08	NPP	DRY		NPP
SW2-0206	3/10/2008	5507.75	27.69	NPP	DRY		NPP
	3/24/2008	5507.75	27.69	NPP	DRY		NPP
SW3-0206	3/10/2008	5505.29	52.56	NPP	26.84	5478.45	NPP
	3/24/2008	5505.29	52.56	NPP	26.88	5478.41	NPP
SW4-0206	3/10/2008	5504.45	42.34	NPP	41.08	5463.37	NPP
	3/24/2008	5504.45	42.34	NPP	40.97	5463.48	NPP
SW5-0206	3/10/2008	5514.34	52.24	NPP	33.72	5480.62	NPP
	3/24/2008	5514.34	52.24	NPP	33.66	5480.68	NPP
SW6-0206	3/10/2008	5519.72	47.41	NPP	45.82	5473.90	NPP
	3/24/2008	5519.72	47.41	NPP	45.94	5473.78	NPP
SW7-0206	3/10/2008	5517.63	32.95	NPP	23.71	5493.92	NPP
	3/24/2008	5517.63	32.95	NPP	23.45	5494.18	NPP

NPP = No Product Present NWP = No Water Present

# Sump Well Fluids Monitoring April 2006

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	4/7/2008	5508.27	53.08	NPP	NWP		NPP
	4/21/2008	5508.27	53.08	NPP	NWP		NPP
SW2-0206	4/7/2008	5507.75	27.69	NPP	NWP		NPP
	4/21/2008	5507.75	27.69	NPP	NWP		NPP
SW3-0206	4/7/2008	5505.29	52.56	NPP	26.81	5478.48	NPP
	4/21/2008	5505.29	52.56	NPP	26.70	5478.59	NPP
SW4-0206	4/7/2008	5504.45	42.34	NPP	39.34	5465.11	NPP
	4/21/2008	5504.45	42.34	NPP	38.05	5466.40	NPP
SW5-0206	4/7/2008	5514.34	52.24	NPP	33.54	5480.80	NPP
	4/21/2008	5514.35	52.24	NPP	33.52	5480.83	NPP
SW6-0206	4/7/2008	5519.72	47.41	NPP	45.87	5473.85	NPP
	4/21/2008	5519.72	47.41	NPP	44.17	5475.55	NPP
SW7-0206	4/7/2008	5517.63	32.95	NPP	23.07	5494.56	NPP
	4/21/2008	5517.63	32.95	NPP	21.27	5496.36	NPP

NPP = No Product Present NWP = No Water Present

# Sump Well Fluids Monitoring May 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	5/5/2008	5508.27	53.08	NPP	DRY		NPP
	5/19/2008	5508.27	53.08	NPP	DRY		NPP
SW2-0206	5/5/2008	5507.75	27.69	NPP	DRY		NPP
	5/19/2008	5507.75	27.69	NPP	DRY		NPP
SW3-0206	5/5/2008	5505.29	52.56	NPP	26.63	5478.66	NPP
	5/19/2008	5505.29	52.56	NPP	26.60	5478.69	NPP
SW4-0206	5/5/2008	5504.45	42.34	NPP	37.03	5467.42	NPP
	5/19/2008	5504.45	42.34	NPP	36.23	5468.22	NPP
SW5-0206	5/5/2008	5514.34	52.24	NPP	33.54	5480.80	NPP
	5/19/2008	5514.34	52.24	NPP	33.63	5480.71	NPP
SW6-0206	5/5/2008	5519.72	47.41	NPP	43.34	5476.38	NPP
	5/19/2008	5519.72	47.41	NPP	43.03	5476.69	NPP
SW7-0206	5/5/2008	5517.63	32.95	NPP	20.69	5496.94	NPP
	5/19/2008	5517.63	32.95	NPP	20.29	5497.34	NPP

NPP = No Product Present    NWP = No Water Present

# Sump Well Fluids Monitoring June 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	6/3/2008	5508.27	53.08	NPP	DRY		NPP
	6/16/2008	5508.27	53.08	NPP	DRY		NPP
	6/30/2008	5508.27	53.08	NPP	DRY		NPP
SW2-0206	6/3/2008	5507.75	27.69	NPP	DRY		NPP
	6/16/2008	5507.75	27.69	NPP	DRY		NPP
	6/30/2008	5507.75	27.69	NPP	DRY		NPP
SW3-0206	6/3/2008	5505.29	52.56	NPP	26.64	5478.65	NPP
	6/16/2008	5505.29	52.56	NPP	26.64	5478.65	NPP
	6/30/2008	5505.29	52.56	NPP	26.71	5478.58	NPP
SW4-0206	6/3/2008	5504.45	42.34	NPP	35.49	5468.96	NPP
	6/16/2008	5504.45	42.34	NPP	35.00	5469.45	NPP
	6/30/2008	5504.45	42.34	NPP	34.71	5469.74	NPP
SW5-0206	6/3/2008	5514.34	52.24	33.99	33.73	5480.40	-0.26
	6/16/2008	5514.34	52.24	34.12	33.95	5480.25	-0.17
	6/30/2008	5514.34	52.24	NPP	34.28	5480.06	NPP
SW6-0206	6/3/2008	5519.72	47.41	42.75	42.85	5476.95	0.10
	6/16/2008	5519.72	47.41	45.95	42.85	5474.39	-3.10
	6/30/2008	5519.72	47.41	NPP	43.04	5476.68	NPP
SW7-0206	6/3/2008	5517.63	32.95	NPP	19.71	5497.92	NPP
	6/16/2008	5517.63	32.95	19.62	19.29	5498.08	-0.33
	6/30/2008	5517.63	32.95	NPP	19.21	5498.42	NPP

NPP = No Product Present NWP = No Water Present



# Sump Well Fluids Monitoring July 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	7/14/2008	5508.27	53.08	NPP	DRY		NPP
	7/28/2008	5508.27	53.08	NPP	DRY		NPP
SW2-0206	7/14/2008	5507.75	27.69	NPP	DRY		NPP
	7/28/2008	5507.75	27.69	NPP	DRY		NPP
SW3-0206	7/14/2008	5505.29	52.56	NPP	26.59	5478.70	NPP
	7/28/2008	5505.29	52.56	NPP	26.47	5478.82	NPP
SW4-0206	7/14/2008	5504.45	42.34	NPP	34.41	5470.04	NPP
	7/28/2008	5504.45	42.34	NPP	34.21	5470.24	NPP
SW5-0206	7/14/2008	5514.34	52.24	34.34	34.36	5480.00	0.02
	7/28/2008	5514.34	52.24	34.38	34.46	5479.94	0.08
SW6-0206	7/14/2008	5519.72	47.41	NPP	43.14	5476.58	NPP
	7/28/2008	5519.72	47.41	NPP	43.19	5476.53	NPP
SW7-0206	7/14/2008	5517.63	32.95	NPP	18.8	5498.83	NPP
	7/28/2008	5517.63	32.95	NPP	18.37	5499.26	NPP

NPP = No Product Present    NWPP = No Water Present

# Sump Well Fluids Monitoring Aug. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	8/6/2008	5508.27	53.08	NPP	52.59	5455.68	NPP
	8/12/2008	5508.27	53.08	NPP	52.56	5455.71	NPP
	8/18/2008	5508.27	53.08	NPP	52.53	5455.74	NPP
	8/25/2008	5508.27	53.08	NPP	52.58	5455.69	NPP
SW2-0206	8/6/2008	5507.75	27.69	NPP	27.59	5480.16	NPP
	8/12/2008	5507.75	27.69	NPP	27.58	5480.17	NPP
	8/18/2008	5507.75	27.69	NPP	27.28	5480.47	NPP
	8/25/2008	5507.75	27.69	NPP	27.57	5480.18	NPP
SW3-0206	8/6/2008	5505.29	52.56	NPP	26.48	5478.81	NPP
	8/12/2008	5505.29	52.56	NPP	26.15	5479.14	NPP
	8/18/2008	5505.29	52.56	NPP	26.15	5479.14	NPP
	8/25/2008	5505.29	52.56	NPP	26.13	5479.16	NPP
SW4-0206	8/6/2008	5504.45	42.34	NPP	34.14	5470.31	NPP
	8/12/2008	5504.45	42.34	NPP	34.06	5470.39	NPP
	8/18/2008	5504.45	42.34	NPP	33.98	5470.47	NPP
	8/25/2008	5504.45	42.34	NPP	33.91	5470.54	NPP
SW5-0206	8/6/2008	5514.34	52.24	34.45	34.55	5479.87	0.10
	8/12/2008	5514.34	52.24	34.13	34.44	5480.15	0.31
	8/18/2008	5514.34	52.24	34.00	34.15	5480.31	0.15
	8/25/2008	5514.34	52.24	33.97	34.10	5480.34	0.13

NPP = No Product Present NWP = No Water Present

Significant Rain Event Before 8-6-08 and a Larger Rain Event 8-6-08 in the Evening

# Sump Well Fluids Monitoring Aug. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW6-0206	8/6/2008	5519.72	47.41	NPP	43.17	5476.55	NPP
	8/12/2008	5519.72	47.41	NPP	43.14	5476.58	NPP
	8/18/2008	5519.72	47.41	NPP	43.07	5476.65	NPP
	8/25/2008	5519.72	47.41	NPP	43.00	5476.72	NPP
SW7-0206	8/6/2008	5517.63	32.95	NPP	18.34	5499.29	NPP
	8/12/2008	5517.63	32.95	NPP	18.02	5499.61	NPP
	8/18/2008	5517.63	32.95	NPP	17.88	5499.75	NPP
	8/25/2008	5517.63	32.95	NPP	17.82	5499.81	NPP

NPP = No Product Present    NWPP = No Water Present

Significant Rain Event Before 8-6-08 and a Larger Rain Event 8-6-08 in the Evening

# Sump Well Fluids Monitoring Sept. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	9/8/2008	5508.27	53.08	NPP	52.57	5455.70	NPP
	9/22/2008	5508.27	53.08	NPP	52.93	5455.34	NPP
SW2-0206	9/8/2008	5507.75	27.69	NPP	27.58	5480.17	NPP
	9/22/2008	5507.75	27.69	NPP	DRY		NPP
SW3-0206	9/8/2008	5505.29	52.56	NPP	26.05	5479.24	NPP
	9/22/2008	5505.29	52.56	NPP	25.98	5479.31	NPP
SW4-0206	9/8/2008	5504.45	42.34	NPP	33.75	5470.70	NPP
	9/22/2008	5504.45	42.34	NPP	33.65	5470.80	NPP
SW5-0206	9/8/2008	5514.34	52.24	33.98	34.15	5480.33	0.17
	9/22/2008	5514.34	52.24	34.11	34.30	5480.19	0.19
SW6-0206	9/8/2008	5519.72	47.41	NPP	42.79	5476.93	NPP
	9/22/2008	5519.72	47.41	NPP	42.65	5477.07	NPP
SW7-0206	9/8/2008	5517.63	32.95	NPP	17.39	5500.24	NPP
	9/22/2008	5517.63	32.95	NPP	17.28	5500.35	NPP

NPP = No Product Present NWP = No Water Present

# Sump Well Fluids Monitoring Oct. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	10/6/2008	5508.27	53.08	NPP	52.79	5455.48	NPP
	10/20/2008	5508.27	53.08	NPP	52.79	5455.48	NPP
SW2-0206	10/6/2008	5507.75	27.69	NPP	DRY		NPP
	10/20/2008	5507.75	27.69	NPP	27.68	5480.07	NPP
SW3-0206	10/6/2008	5505.29	52.56	NPP	25.91	5479.38	NPP
	10/20/2008	5505.29	52.56	NPP	25.91	5479.38	NPP
SW4-0206	10/6/2008	5504.45	42.34	NPP	33.53	5470.92	NPP
	10/20/2008	5504.45	42.34	NPP	33.45	5471.00	NPP
SW5-0206	10/6/2008	5514.34	52.24	34.23	34.34	5480.09	0.11
	10/20/2008	5514.34	52.24	34.21	34.46	5480.08	0.25
SW6-0206	10/6/2008	5519.72	47.41	NPP	42.44	5477.28	NPP
	10/20/2008	5519.72	47.41	NPP	42.23	5477.49	NPP
SW7-0206	10/6/2008	5517.63	32.95	NPP	17.07	5500.56	NPP
	10/20/2008	5517.63	32.95	NPP	17.23	5500.40	NPP

NPP = No Product Present    NWP = No Water Present

# Sump Well Fluids Monitoring Nov. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	11/3/2008	5508.27	53.08	NPP	52.78	5455.49	NPP
	11/17/2008	5508.27	53.08	NPP	52.78	5455.49	NPP
SW2-0206	11/3/2008	5507.75	27.69	NPP	27.57	5480.18	NPP
	11/17/2008	5507.75	27.69	NPP	27.49	5480.26	NPP
SW3-0206	11/3/2008	5505.29	52.56	NPP	25.79	5479.50	NPP
	11/17/2008	5505.29	52.56	NPP	25.98	5479.31	NPP
SW4-0206	11/3/2008	5504.45	42.34	NPP	33.39	5471.06	NPP
	11/17/2008	5504.45	42.34	NPP	33.24	5471.21	NPP
SW5-0206	11/3/2008	5514.34	52.24	34.11	34.38	5480.18	0.27
	11/17/2008	5514.34	52.24	34.19	34.53	5480.08	0.34
SW6-0206	11/3/2008	5519.72	47.41	NPP	42.04	5477.68	NPP
	11/17/2008	5519.72	47.41	NPP	41.63	5478.09	NPP
SW7-0206	11/3/2008	5517.63	32.95	NPP	16.98	5500.65	NPP
	11/17/2008	5517.63	32.95	NPP	17.54	5500.09	NPP

NPP = No Product Present NWP = No Water Present

# Sump Well Fluids Monitoring Dec. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW1-0206	12/1/2008	5508.27	53.08	NPP	52.78	5455.49	NPP
	12/15/2008	5508.27	53.08	NPP	52.77	5455.50	NPP
	12/18/2008	5508.27	53.08	NPP	52.77	5455.50	NPP
	12/29/2008	5508.27	53.08	NPP	52.78	5455.49	NPP
SW2-0206	12/1/2008	5507.75	27.69	NPP	27.39	5480.36	NPP
	12/15/2008	5507.75	27.69	NPP	27.29	5480.46	NPP
	12/18/2008	5507.75	27.69	NPP	27.27	5480.48	NPP
	12/29/2008	5507.75	27.69	NPP	27.23	5480.52	NPP
SW3-0206	12/1/2008	5505.29	52.56	NPP	25.89	5479.40	NPP
	12/15/2008	5505.29	52.56	NPP	25.90	5479.39	NPP
	12/18/2008	5505.29	52.56	NPP	25.86	5479.43	NPP
	12/29/2008	5505.29	52.56	NPP	26.06	5479.23	NPP
SW4-0206	12/1/2008	5504.45	42.34	NPP	33.17	5471.28	NPP
	12/15/2008	5504.45	42.34	NPP	33.05	5471.40	NPP
	12/18/2008	5504.45	42.34	NPP	33.01	5471.44	NPP
	12/29/2008	5504.45	42.34	NPP	32.97	5471.48	NPP
SW5-0206	12/1/2008	5514.34	52.24	33.09	33.40	5481.19	0.31
	12/15/2008	5514.34	52.24	34.03	34.40	5480.24	0.37
	12/18/2008	5514.34	52.24	33.95	34.30	5480.32	0.35
	12/29/2008	5514.34	52.24	34.09	34.45	5480.18	0.36

NPP = No Product Present NWP = No Water Present

Significant Snow & Rain Event Week of 12-15-08

Significant Snow & Rain Event Week of 12-22-08

# Sump Well Fluids Monitoring Dec. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
SW6-0206	12/1/2008	5519.72	47.41	NPP	41.39	5478.33	NPP
	12/15/2008	5519.72	47.41	NPP	41.07	5478.65	NPP
	12/18/2008	5519.72	47.41	NPP	40.96	5478.76	NPP
	12/29/2008	5519.72	47.41	NPP	40.75	5478.97	NPP
SW7-0206	12/1/2008	5517.63	32.95	NPP	17.14	5500.49	NPP
	12/15/2008	5517.63	32.95	NPP	17.07	5500.56	NPP
	12/18/2008	5517.63	32.95	NPP	17.06	5500.57	NPP
	12/29/2008	5517.63	32.95	NPP	17.59	5500.04	NPP

NPP = No Product Present    NWP = No Water Present

Significant Snow & Rain Event Week of 12-15-08

Significant Snow & Rain Event Week of 12-22-08



## Water Quality Field Measurements

RW/MW	Date	Depth to H <sub>2</sub> O (ft)	Depth to Product (ft)	Well Depth (ft)	TDS (mg/L)	E.C. (umhos/cm)	pH	TEMP. (Fahrenheit)
MW #1	Aug-08	16.92	NPP	21.56	579	831	7.03	61.2
	Apr-08	17.15	NPP	21.56	617	873	6.93	54.5
	Aug-07	17.29	NPP	21.56	570	854	6.97	64.3
MW #3	Aug-08	36.27	NPP	36.75	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Aug-07	36.41	NPP	36.75	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Apr-07	36.35	NPP	36.75	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
MW #4	Aug-08	27.03	NPP	30.48	1680	2287.0	6.96	64.7
	Aug-07	27.53	27.5	30.48	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	26.53	NPP	30.48	1660	2207	6.99	66.0
MW #5	Aug-08	NWP	NPP	37.2	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Aug-07	NWP	NPP	37.2	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Apr-07	NWP	NPP	37.2	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
MW #6	Aug-08	NWP	NPP	47.92	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Apr-08	NWP	NPP	47.92	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Aug-07	NWP	NPP	47.92	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
MW #7	Aug-08	27.39	NPP	62.61	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	27.22	NPP	62.61	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	27.14	NPP	62.61	7370	8491	6.93	64.7
MW #8	Aug-08	31.65	NPP	35.93	1943	2612	6.96	59.7
	Apr-08	31.61	NPP	35.93	2184	2851	6.84	59.0
	Aug-07	31.84	NPP	35.93	2800	2471	6.93	61.2
MW #11	Aug-08	10.46	NPP	22.94	1655	2226	7.02	66.7
	Aug-07	10.65	NPP	22.94	1400	2109	7.01	66.9
	Apr-07	10.79	NPP	22.94	1457	1944	6.93	55.0
MW #12	Aug-08	10.28	NPP	14.98	541	775	7.10	62.6
	Apr-08	9.56	NPP	14.98	495	707	6.84	51.1
	Aug-07	10.59	NPP	14.98	1500	987	7.05	68.1
MW #13	Aug-08	40.36	NPP	52.89	3079	3943	6.92	60.9
	Apr-08	40.25	NPP	52.89	3178	4016	6.82	61.8
	Aug-07	40.27	NPP	52.89	3000	4078	6.98	61.8
MW #20	Aug-08	21.15	20.71	27.13	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-08	21.03	20.69	27.13	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	21.15	20.66	27.13	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

NWP = No Water Present

NPP = No Product Present

## Water Quality Field Measurements

RW/MW	Date	Depth to H2O (ft)	Depth to Product (ft)	Well Depth (ft)	TDS (mg/L)	E.C. (umhos/cm)	pH	TEMP. (Fahrenheit)
MW #21	Aug-08	21.9	21.79	30.38	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	21.82	21.72	30.38	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	21.73	21.67	30.38	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #25	Aug-08	33.05	32.67	41.2	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	33.07	32.62	41.2	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	32.53	32.33	41.2	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #26	Aug-08	17.21	NPP	25.11	2179	2878	6.95	63.4
	Aug-07	17.16	NPP	25.11	1600	2670	6.97	65.3
	Apr-07	16.79	NPP	25.11	1700	2589	6.94	63.0
MW #27	Aug-08	18.13	NPP	24.42	1973	2639	7.01	63.4
	Aug-07	18.34	NPP	24.42	2400	2905	6.99	63.4
	Apr-07	18.04	NPP	24.42	3000	2945	6.89	59.4
MW #29	Aug-08	22.80	NPP	28.62	637	917	7.0	62.1
	Aug-07	23.19	NPP	28.62	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	23.15	NPP	28.62	1230	1669	6.91	59.7
MW #30	Aug-08	33.85	NPP	40.13	2219	2935	6.94	65.3
	Apr-08	33.74	NPP	40.13	2252	2930	6.82	62.2
	Aug-07	34.00	NPP	40.13	2400	2995	6.98	65.8
MW #31	Aug-08	34.00	NPP	39.16	3250	4144	7.0	62.4
	Aug-07	34.04	NPP	39.16	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	33.92	NPP	39.16	3210	4024	6.96	64.0
MW #32	Aug-08	24.97	NPP	27.51	4364	5426	7.00	61.4
	Aug-07	24.77	NPP	27.51	3800	5407	6.95	59.1
	Apr-07	24.49	NPP	27.51	3100	5228	6.89	60.5
MW #33	Aug-08	22.25	NPP	25.51	2966	3840	6.98	62.6
	Apr-08	22.2	NPP	25.51	1500	39	6.83	59.7
	Aug-07	21.93	NPP	25.51	3400	4047	6.97	61.1
MW #34	Aug-08	13.36	NPP	20.96	1225	1701	7.02	63.2
	Aug-07	13.57	NPP	20.96	1300	1739	6.98	65.8
	Apr-07	13.53	NPP	20.96	935	1290	6.92	52.5
MW #35	Aug-08	21.98	NPP	26.45	1311	1810	7.01	61.4
	Apr-08	22	NPP	26.45	1228	1679	6.84	58.0
	Aug-07	21.8	NPP	26.45	980	1689	6.98	65.8

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NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

NWP = No Water Present

NPP = No Product Present

## Water Quality Field Measurements

RW/MW	Date	Depth to H2O (ft)	Depth to Product (ft)	Well Depth (ft)	TDS (mg/L)	E.C. (umhos/cm)	pH	TEMP. (Farenheit)
MW #36	Aug-08	20.71	NPP	23.26	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	20.43	NPP	23.26	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	20.46	NPP	23.26	619	864	6.92	58.2
MW #37	Aug-08	23.37	NPP	27.58	1601	2164	7.02	62.4
	Apr-08	23.27	NPP	27.58	1707	2281	6.82	59.2
	Aug-07	23.23	NPP	27.58	1500	2477	6.99	65.3
MW #38	Aug-08	23.53	NPP	26.82	932	1306	7.00	62.5
	Apr-08	23.46	NPP	26.82	1040	1439	6.85	59.4
	Aug-07	23.54	NPP	26.82	890	1481	6.99	64.7
MW #39	Aug-08	25.92	NPP	38.34	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	26.59	NPP	38.34	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	30.7	NPP	38.34	4689	5561.0	6.90	63.4
MW #40	Aug-08	28.25	NPP	30.07	2121	2827.0	6.9	68.4
	Aug-07	28.37	28.17	30.07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	27.23	NPP	30.07	2407	3103	6.95	64.7
MW #41	Aug-08	27.22	26.76	31.62	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	27.35	26.62	31.62	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	25.87	NPP	31.62	2305	2928	6.91	66.8
MW #44	Aug-08	33.91	NPP	50.91	4080	5099.0	6.91	62.4
	Aug-07	34.19	NPP	50.91	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	33.68	NPP	50.91	4400	5319	6.71	58.4
MW #45	Aug-08	11.72	NPP	16.92	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	11.32	NPP	16.92	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Aug-07	11.28	NPP	16.92	1640	2178	6.88	56.6
MW #46	Aug-08	NS	NPP	10.39	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Aug-07	NS	NPP	10.39	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Apr-07	NS	NPP	10.39	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
MW#47	Aug-08	13.3	12.68	14.28	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	13.25	12.39	14.28	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	12.85	12.02	14.28	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
O/F #2	Aug-08	Not a Well	Not a Well	Not a Well	1220	1696	7.07	66.7
	Apr-08	Not a Well	Not a Well	Not a Well	550	866	6.89	56.5
	Aug-07	Not a Well	Not a Well	Not a Well	730	1026	7.00	64.0

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NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

NWP = No Water Present

NPP = No Product Present

## Water Quality Field Measurements

RW/MW	Date	Depth to H2O (ft)	Depth to Product (ft)	Well Depth (ft)	TDS (mg/L)	E.C. (umhos/cm)	pH	TEMP. (Fahrenheit)
O/F #3	Aug-08	Not a Well	Not a Well	Not a Well	310	455	7.08	68.1
	Apr-08	Not a Well	Not a Well	Not a Well	610	920	6.88	53.3
	Aug-07	Not a Well	Not a Well	Not a Well	230	359	6.99	57.8
RW #1	Aug-08	30.92	NPP	40.8	2097	2793	7.03	63.8
	Aug-07	31.15	NPP	40.8	2100	2896	6.98	65.2
	Apr-07	29.98	NPP	40.8	1700	2380	6.93	64.7
RW #2	Aug-08	27.03	26.11	35.86	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	26.77	26.74	35.86	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	25.63	NPP	35.86	1687	2236	6.96	64.0
RW #3	Aug-08	21.57	NPP	34.57	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	21.74	NPP	34.57	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	20.97	NPP	34.57	2355	3041	6.92	63.4
RW #9	Aug-08	24.84	24.83	34.04	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	24.76	NPP	34.04	2300	2908.0	6.97	65.5
	Apr-07	24.31	NPP	34.04	3798	5624.0	6.75	59.1
RW #14	Aug-08	34.94	NPP	41.94	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	35.42	35.1	41.94	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	35.6	35.58	41.94	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #15	Aug-08	34.67	NPP	43.43	2435	3206.0	6.90	62.0
	Aug-07	34.84	NPP	43.43	2000	3181.0	7.00	64.8
	Apr-07	34.73	NPP	43.43	2499	3220.0	6.79	59.7
RW #16	Aug-08	35.0	NPP	41.48	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	33.79	NPP	41.48	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	33.63	NPP	41.48	2185	2812	6.81	59.9
RW #17	Aug-08	32.61	NPP	41.89	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	33.0	NPP	41.89	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	32.53	32.72	41.89	2365	3061	6.97	69.3
RW #18	Aug-08	33.97	33.95	37.58	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	29.75	29.58	37.58	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	29.03	28.94	37.58	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #19	Aug-08	29.88	NPP	36.64	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	30.34	30.31	36.64	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	29.52	NPP	36.64	2160	2825	6.80	62.1

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NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

NWP = No Water Present

NPP = No Product Present

## Water Quality Field Measurements

RW/MW	Date	Depth to H2O (ft)	Depth to Product (ft)	Well Depth (ft)	TDS (mg/L)	E.C. (umhos/cm)	pH	TEMP. (Fahrenheit)
RW #22	Aug-08	25.52	NPP	35.61	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	25.49	NPP	35.61	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	24.92	NPP	35.61	1140	1926	6.81	59.7
RW #23	Aug-08	22.91	NPP	35.53	1139	1596.0	7.03	65.8
	Aug-07	23.1	23.07	35.53	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	23.09	23.05	35.53	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #28	Aug-08	29.13	28.94	36.99	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	29.15	28.59	36.99	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	28.3	28.09	36.99	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #42	Aug-08	26.78	26.65	32.02	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	27.71	27.2	32.02	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	26.63	26.5	32.02	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #43	Aug-08	20.68	20.55	24.03	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	20.74	20.53	24.03	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	20.22	NPP	24.03	1432	1942	6.93	68.5

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# Background Wells

## Groundwater Analysis - Organics

Sample Location	Date	April 2007 - EPA Method 8021B August 2007 & April/August 2008 - EPA Method 8260B					EPA Method 8015B		WQCC 20 NMAC 6:2-3103 40CFR 41.61 (Benzene and Ethylbenzene) IPI Screening Guidelines Table 2a (DRO)
		Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)	
		0.005	0.75	0.70	0.62		1.72		
MW #3	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Apr-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Apr-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
MW #5	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Apr-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Apr-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
MW #6	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Apr-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Apr-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	

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NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

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# Background Wells

## Groundwater Analysis - General Chemistry

WQGC 20-NMAC 6.2.3103

		EPA 300.0								SM 2320B	
Sample Location	Date	Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Bromide (mg/L)	Nitrogen (mg/L)	P (mg/L)	Sulfate (mg/L)	CO2 (mg/L)	ALK (mg/L)	
MW # 3	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-06	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-05	0.33	1200	<0.50	4.5	42	<0.50	2300	680	680	
	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
MW # 5	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-06	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-05	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
MW # 6	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-06	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-05	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

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NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Background Wells

## Groundwater Analysis - Total Metals

Sample Location	Date	EPA Method 6010B, EPA Method 7470: Mercury								40 CFR 141.62 MCL	
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Cr (mg/L)	Lead (mg/L)	Se (mg/L)	Silver (mg/L)	Mercury (mg/L)		
MW #3	Aug-08	NS¹	NS¹	NS¹	0.05	0.05	0.05	0.05	0.002	NS¹	NS¹
	Aug-07	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Aug-06	NS¹	NS¹	NS¹	0.016	<0.005	NS¹	NS¹	NS¹	NS¹	NS¹
	Aug-05	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
MW #5	Aug-08	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Aug-07	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Aug-06	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Aug-05	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
MW #6	Aug-08	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Aug-07	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Aug-06	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Aug-05	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹

NS¹= Well is Dry or Not Enough Water to Sample- No Sample

NS² = Not Sampled due to approved Facility-Wide Monitoring Plan

NS³ = Sample Inadvertently not Collected this Sampling Event

NR¹= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR² = No Sample Required per OCD and NMED pre-2007 Conditions



# Background Wells

## Groundwater Analysis - Dissolved Metals

		EPA Method 6020A for Uranium - EPA Method 6010B for All Other Metals														WQCC 20 NMAC 6.2.3103			
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Cr (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Se (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)		
MW # 3	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		
	Aug-06	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		
	Aug-05	<0.020	0.018	<0.002	480	<0.006	<0.006	0.047	<0.005	130	0.43	7.6	<0.050	<0.005	1300	<0.10	0.018		
	Aug-04	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		
MW # 5	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		
	Aug-06	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		
	Aug-05	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		
	Aug-04	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		
MW # 6	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		
	Aug-06	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		
	Aug-05	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		
	Aug-04	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample- No Sample  
 NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan  
 NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event  
 NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Refinery Wells

## Groundwater Analysis - Organics

Sample Location	Date	April 2007 - EPA Method 8021B August 2007 & April/August 2008 - EPA Method 8260B					EPA Method 8015B		
		Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)	
		0.005	0.75	0.70	0.62		1.72		
RW #1	Aug-08	0.2	<0.005	0.21	0.067	0.021	47	6.7	WQCC 20 NMAC 6.2.3.103 40GFR/41.6/1 Benzene and Ethylbenzene TPH Screening Guidelines Table 2a (DRO)
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Aug-07	0.25	<0.005	0.56	0.4	0.013	NR <sup>2</sup>	NR <sup>2</sup>	
	Apr-07	0.035	0.041	0.031	0.012	<0.012	NR <sup>2</sup>	NR <sup>2</sup>	
MW #4	Aug-08	0.53	<0.01	0.11	1.6	<0.01	17	10	
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Apr-07	1.2	<0.01	0.068	0.7	<0.025	NR <sup>2</sup>	NR <sup>2</sup>	
MW #8	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05	
	Apr-08	<0.001	<0.001	<0.001	<0.003	<0.0015	<1.0	<0.05	
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	NR <sup>2</sup>	
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	NR <sup>2</sup>	NR <sup>2</sup>	
RW #9	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Aug-07	9.7	<0.02	0.59	4.1	5.7	NR <sup>2</sup>	NR <sup>2</sup>	
	Apr-07	11	<0.10	0.87	4.1	8.6	NR <sup>2</sup>	NR <sup>2</sup>	
RW #15	Aug-08	6.0	1.0	4.1	21.0	0.03	2.3	62	
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Aug-07	6.9	6.2	3.5	20	0.03	NR <sup>2</sup>	NR <sup>2</sup>	
	Apr-07	6.8	2.9	3	15	<0.62	NR <sup>2</sup>	NR <sup>2</sup>	
RW #18	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
MW #20	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Apr-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Refinery Wells

## Groundwater Analysis - Organics

Sample Location	Date	April 2007 - EPA Method 8021B : August 2007 & April/August 2008 - EPA Method 8260B					EPA Method 8015B	
		Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
		0.005	0.75	0.70	0.62		1.72	
MW #21	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #23	Aug-08	9.8	<0.10	1.6	9.7	1.5	48	70
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #28	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #29	Aug-08	<0.001	<0.001	<0.001	<0.0015	0.001	<1.0	<0.05
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>
	Apr-07	<0.001	<0.001	<0.001	<0.002	0.004	NR <sup>2</sup>	NR <sup>2</sup>
MW #30	Aug-08	6.7	6.7	4.5	18.0	<0.1	6.3	80
	Apr-08	6.0	2.4	3.5	13.0	<0.15	7.3	68
	Aug-07	6.0	2.9	4.0	16.0	<0.02	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	5.7	3.3	5.4	21.0	<0.62	NR <sup>2</sup>	NR <sup>2</sup>
MW #31	Aug-08	4.0	0.018	1.4	3.0	<0.01	<1.0	<0.05
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>
	Apr-07	4.3	<0.10	1.4	4.7	<0.25	NR <sup>2</sup>	NR <sup>2</sup>
MW #40	Aug-08	0.034	<0.001	0.0056	0.0018	0.016	41	5.1
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>

MOCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene)  
 TPH Screening Guidelines Table 2a (DRO)

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample- No Sample  
 NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan  
 NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event  
 NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Refinery Wells

## Groundwater Analysis - Organics

		April 2007 - EPA Method 8021B : August 2007 & April/August 2008 - EPA Method 8260B					EPA Method 8015B		WQCG 20 NMAG 6.2.3.103 40CFR141.61 (Benzene and Ethylbenzene) TPH Screening Guidelines Table 2a (DRO)
Sample Location	Date	Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)	
		0.005	0.75	0.70	0.62		1.72		
RW #42	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
RW #43	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Apr-07	15	4.5	0.81	6.3	12	NR <sup>2</sup>	NR <sup>2</sup>	
MW #44	Aug-08	<0.001	<0.001	<0.001	<0.0015	0.0018	<1.0	<0.05	
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Aug-07	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	
	Apr-07	<0.001	0.006	0.003	0.034	<0.0025	NR <sup>2</sup>	NR <sup>2</sup>	

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Refinery Wells

## Groundwater Analysis - General Chemistry

Sample Location	Date	EPA 300.0							SM 2320B		
		Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Bromide (mg/L)	Nitrogen (mg/L)	P (mg/L)	Sulfate (mg/L)	CO2 (mg/L)	ALK (mg/L)	
RW #1	Aug-08	1.6	250	<0.50	2.3	<0.10	<0.50	600	1100	1100	
	Aug-07	<0.50	220	<0.50	2.2	<0.50	<2.5	110	1400	1300	
	Aug-06	<0.50	230	<0.50	2.8	NS <sup>2</sup>	<2.5	3.8	1200	1200	
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
MW #4	Aug-08	0.23	190	<0.10	3.5	<0.10	<0.50	4.4	1000	1000	
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-06	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
MW #8	Aug-08	0.69	180	0.12	1.6	24	<0.50	790	220	230	
	Aug-07	0.74	410	<0.10	1.6	20	<0.50	1300	200	190	
	Aug-06	0.67	300	26	1.5	NS <sup>2</sup>	<0.50	980	200	210	
	Aug-05	0.79	260	<0.50	<2.5	27	<0.50	740	260	260	
RW #9	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-07	<2.0	420	<2.0	3.9	<2.0	<10	41	1200	1000	
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
RW #15	Aug-08	0.29	420	<2.0	7.8	<0.10	<0.50	0.76	1200	1200	
	Aug-07	0.32	400	<2.0	8.4	<0.10	<0.50	<0.50	1300	1300	
	Aug-06	<0.50	370	<0.50	7.6	NS <sup>2</sup>	<2.5	<2.5	1200	1200	
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
RW #18	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-05	<1.0	110	<1.0	<5.0	<1.0	<5.0	940	590	NS <sup>2</sup>	

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

WQCC 20/NMAC 6.2.3103

# Refinery Wells

## Groundwater Analysis - General Chemistry

Sample Location	Date	EPA 300.0						SM 2320B		
		Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Bromide (mg/L)	Nitrogen (mg/L)	P (mg/L)	Sulfate (mg/L)	CO2 (mg/L)	ALK (mg/L)
MW #20	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #21	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #23	Aug-08	0.4	76	<0.10	<1.0	<0.10	<0.50	3.2	850	780
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #28	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #29	Aug-08	0.36	57	<0.10	0.4	0.99	<0.50	160	200	210
	Aug-07	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #30	Aug-08	0.15	210	<0.10	5.6	<0.10	<0.50	12	1500	1400
	Aug-07	0.17	240	<0.10	4.7	<0.10	<0.50	76	1500	1400
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>

WQCC 20 NMAC 6.2.3103

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NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Refinery Wells

## Groundwater Analysis - General Chemistry

Sample Location	Date	EPA 300.0							SM 2320B		
		Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Bromide (mg/L)	Nitrogen (mg/L)	P (mg/L)	Sulfate (mg/L)	CO2 (mg/L)	ALK (mg/L)	
MW #31	Aug-08	0.15	740	<1.0	17	<0.10	<0.50	6.4	1100	1100	
	Aug-07	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	
MW #40	Aug-08	0.33	310	<2.0	4.4	<2.0	<0.50	<0.50	1200	1200	
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
RW #42	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
RW #43	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	
MW #44	Aug-08	0.62	72	<0.10	0.28	<0.10	<0.50	3000	360	350	
	Aug-07	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	

WQCC 20 NMAC 6.2.3.103

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NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions



# Refinery Wells

## Groundwater Analysis - Total Metals

		EPA Method 6010B, EPA Method 7470: Mercury								40 CFR 141.61 MCL							
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Se (mg/L)	Silver (mg/L)	Mercury (mg/L)								
RW #1	Aug-08	<0.020	1.7	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002								
	Aug-07	<0.020	0.61	<0.002	<0.006	0.019	<0.05	<0.005	<0.0002								
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	<0.006	<0.005	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>								
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>								
MW #4	Aug-08	<0.020	1.3	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002								
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>								
	Aug-06	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>								
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>								
MW #8	Aug-08	<0.020	<0.020	<0.002	0.0071	<0.005	<0.05	<0.005	<0.0002								
	Aug-07	<0.020	0.027	<0.002	0.56	<0.005	<0.05	0.069	<0.0002								
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	2.9	<0.005	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>								
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	0.33	<0.005	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>								
RW #9	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>								
	Aug-07	<0.020	1.7	<0.002	<0.006	0.052	<0.05	<0.005	<0.0002								
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>								
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>								
RW #15	Aug-08	<0.020	1.2	<0.002	<0.006	<0.005	<0.05	<0.005	<0.001								
	Aug-07	<0.020	1.8	<0.002	<0.006	<0.005	<0.05	<0.005	<0.001								
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	<0.006	<0.005	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>								
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>								
RW #18	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>								
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>								
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>								
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	0.32	0.16	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>								

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# Refinery Wells

## Groundwater Analysis - Total Metals

		EPA Method 6010B, EPA Method 7470: Mercury								40 CFR 141.61 MCL	
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Selenium (mg/L)	Silver (mg/L)	Mercury (mg/L)		
MW #20	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #21	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #23	Aug-08	<0.020	1.4	<0.0020	<0.0060	0.013	<0.25	<0.0050	<0.00020	<0.00020	<0.00020
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #28	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #29	Aug-08	<0.020	0.072	<0.0020	<0.0060	<0.0050	<0.25	<0.0050	<0.00020	<0.00020	<0.00020
	Aug-07	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #30	Aug-08	<0.020	0.72	<0.0020	<0.0060	<0.0050	<0.25	<0.0050	<0.00020	<0.00020	<0.00020
	Aug-07	<0.020	0.89	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002	<0.0002	<0.0002
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NIMED pre-2007 Conditions

# Refinery Wells

## Groundwater Analysis - Total Metals

		EPA Method 6010B, EPA Method 7470: Mercury								40 CFR 141.61 MCL									
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Cr (mg/L)	Lead (mg/L)	Se (mg/L)	Silver (mg/L)	Mercury (mg/L)										
MW #31	Aug-08	<0.020	1.1	<0.0020	<0.0060	<0.0050	<0.050	<0.0050	<0.00020										
	Aug-07	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>										
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>										
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>										
MW #40	Aug-08	<0.020	1.8	<0.0020	<0.0060	<0.0050	<0.25	<0.0050	<0.00020										
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
RW #42	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
RW #43	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
MW #44	Aug-08	<0.020	<0.020	<0.0020	<0.0060	<0.0050	<0.25	<0.0050	<0.00020										
	Aug-07	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>										
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>										
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Refinery Wells

## Groundwater Analysis - Dissolved Metals

		EPA Method 6020A for Uranium - EPA Method 6010B for All Other Metals														WQCC 20NMAG 6.2.3103	
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Cr (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Se (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
RW #1	Aug-08	<0.02	1.7	<0.002	NS <sup>3</sup>	<0.006	<0.006	3.7	<0.005	NS <sup>3</sup>	2.5	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	<0.001	0.052
	Aug-07	<0.02	68	<0.002	140	<0.006	<0.006	8.0	0.007	37	4.2	3.1	<0.25	<0.005	530	<0.10	<0.05
	Aug-06	<0.20	1.7	<0.002	120	<0.006	<0.006	6.4	0.008	32	3	3.2	<0.05	<0.005	500	<0.10	0.057
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #4	Aug-08	<0.02	1.3	<0.002	NS <sup>3</sup>	<0.006	<0.006	9.6	<0.005	NS <sup>3</sup>	3.1	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	<0.001	<0.05
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #8	Aug-08	<0.02	<0.02	<0.002	NS <sup>3</sup>	0.007	<0.006	0.1	<0.005	NS <sup>3</sup>	0.027	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	0.01	0.096
	Aug-07	<0.020	<0.020	<0.002	250	<0.006	<0.006	0.2	<0.005	35	0.24	3.1	0.1	<0.005	420	<0.10	<0.05
	Aug-06	<0.020	0.018	<0.002	230	<0.006	<0.006	0.033	<0.005	35	0.42	3.2	0.05	<0.005	380	<0.10	0.044
	Aug-05	<0.020	0.021	<0.002	230	<0.006	<0.006	0.078	<0.005	37	0.65	3.1	<0.05	<0.005	360	<0.10	0.014
RW #9	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	<0.020	2.5	<0.002	180	<0.006	<0.006	16.0	0.026	52	4.4	3.0	<0.25	<0.005	400	<0.10	0.084
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #15	Aug-08	<0.02	1.2	<0.002	130	<0.006	<0.006	5.3	<0.005	44	2.8	3.7	<0.25	<0.005	550	<0.001	0.054
	Aug-07	<0.020	1.6	<0.002	140	<0.006	<0.006	16.0	<0.005	42	3.2	3.3	<0.25	<0.005	550	<0.10	0.057
	Aug-06	<0.020	1.3	<0.002	140	<0.006	<0.006	9.9	0.009	43	3.2	3.2	<0.05	<0.005	560	<0.10	0.034
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #18	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	<0.020	0.038	<0.002	220	<0.006	<0.006	5.0	<0.005	64	4.1	4.4	<0.050	<0.005	500	<0.10	0.021

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample- No Sample  
 NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Pla  
 NS<sup>3</sup> = Sample inadvertently not Analyzed this Sampling Event

NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Refinery Wells

## Groundwater Analysis - Dissolved Metals

EPA Method 6020A for Uranium - EPA Method 6010B for All Other Metals																	
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Se (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
MW #20	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #21	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #23	Aug-08	<0.02	1.4	<0.002	110	<0.006	<0.006	2.9	0.013	47	4.6	6.3	<0.25	<0.005	170	<0.001	<0.05
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #28	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #29	Aug-08	<0.02	<0.02	<0.002	NS <sup>3</sup>	<0.006	<0.006	<0.02	<0.005	NS <sup>3</sup>	0.97	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	0.002	0.059
	Aug-07	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #30	Aug-08	<0.02	0.72	<0.002	NS <sup>3</sup>	<0.006	<0.006	0.37	<0.005	NS <sup>3</sup>	1.7	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	<0.001	<0.05
	Aug-07	<0.02	0.59	<0.002	190	<0.006	<0.006	0.31	<0.005	39	1.8	2.9	<0.25	<0.005	560	<0.10	<0.05
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample  
 NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan  
 NS<sup>3</sup> = Sample Inadvertently not Analyzed this Sampling Event

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Refinery Wells

## Groundwater Analysis - Dissolved Metals

EPA Method 6020A for Uranium - EPA Method 6010B for All Other Metals																	
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Se (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
MW #31	Aug-08	<0.02	1.1	<0.002	NS <sup>3</sup>	<0.006	<0.006	0.21	<0.005	NS <sup>3</sup>	0.74	NS <sup>3</sup>	<0.05	<0.005	NS <sup>3</sup>	<0.001	<0.05
	Aug-07	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Aug-08	<0.02	1.8	<0.002	91	<0.006	<0.006	5.5	<0.005	42	2.5	3.5	<0.25	<0.005	520	<0.001	0.063
MW #40	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #42	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
RW #43	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-06	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #44	Aug-08	<0.02	<0.02	<0.002	470	<0.006	<0.006	0.083	<0.005	64	1.7	8.0	<0.25	<0.005	900	0.001	<0.05
	Aug-07	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>	NS <sup>3</sup>
	Aug-06	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>
	Aug-05	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-08	<0.02	<0.02	<0.002	470	<0.006	<0.006	0.083	<0.005	64	1.7	8.0	<0.25	<0.005	900	0.001	<0.05

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample- No Sample  
 NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan  
 NS<sup>3</sup> = Sample inadvertently not Analyzed this Sampling Event

NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Refinery Wells

## Groundwater Analysis - Semi-Volatile Organic Compounds

EPA Method 8270B									
1 - WQCC 20 NMAC 6.2.3103									
2 - USEPA Region VI Human Health Medium - Specific Screening Level 2008									
Sample Location	Date	Acenaphthene (mg/L)	Bis(2-ethylhexyl) phthalate (mg/L)	2,4 Dimethylphenol (mg/L)	Fluorene (mg/L)	2-Methylnaphthalene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Phenol (mg/L)
		0.37 <sup>2</sup>	0.048 <sup>2</sup>		0.24 <sup>2</sup>		0.03 <sup>1</sup>		
RW #1	Aug-08	0.011	0.051	<0.01	0.058	0.54	0.29	0.077	<0.01
	Aug-07	0.022	0.077	<0.02	0.088	0.86	0.43	0.093	<0.02
RW #9	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	<0.02	<0.03	0.029	<0.02	0.12	0.13	0.026	0.044
RW #15	Aug-08	<0.01	<0.01	0.013	<0.01	0.079	0.28	<0.01	0.018
	Aug-07	<0.05	<0.075	0.078	<0.05	0.33	0.35	0.068	0.11
RW #23	Aug-08	<0.05	<0.05	<0.050	0.083	2.6	1.5	0.15	<0.05
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #4	Aug-08	<0.01	0.022	0.022	<0.01	0.082	0.096	<0.01	<0.01
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW #30	Aug-08	<0.01	<0.01	0.019	<0.01	0.21	0.59	<0.01	<0.01
	Aug-07	<0.01	<0.015	<0.01	<0.01	0.14	0.44	<0.01	<0.01
MW #40	Aug-08	<0.05	<0.05	<0.05	<0.05	0.3	0.14	0.056	<0.05
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Cross - Gradient Wells

## Groundwater Analysis - Organics

Sample Location	Date	April 2007 - EPA Method 8021B : August 2007 & April/August 2008 - EPA Method 8260B					EPA Method 8015B	
		Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
		0.005	0.75	0.70	0.62		1.72	
MW #1	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-08	<0.001	<0.001	0.0023	0.016	<0.0015	<1.0	0.21
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	NR <sup>2</sup>	NR <sup>2</sup>
MW #13	Aug-08	<0.001	<0.001	<0.001	0.0015	0.0022	<1.0	<0.05
	Apr-08	<0.001	<0.001	<0.001	<0.003	0.0032	<1.0	<0.05
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	<0.001	<0.001	<0.001	<0.002	0.005	NR <sup>2</sup>	NR <sup>2</sup>
MW #26	Aug-08	0.12	<0.002	<0.002	0.0039	0.011	2.0	7.9
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	0.079	<0.01	0.18	<0.015	0.011	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	0.72	<0.01	0.37	0.035	<0.025	NR <sup>2</sup>	NR <sup>2</sup>
MW #27	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	1.3	<0.05
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	NR <sup>2</sup>	NR <sup>2</sup>
MW #32	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	NR <sup>2</sup>	NR <sup>2</sup>
MW #33	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-08	<0.001	<0.001	<0.001	<0.003	<0.0015	<1.0	<0.05
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	NR <sup>2</sup>	NR <sup>2</sup>

WQCC 20 NMAC 6.2.3.103 40CFR 141.61 (Benzene and Ethylbenzene)  
 IIPH Screening Guidelines Table 2a (DRO)

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample  
 NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan  
 NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event  
 NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions



# Cross - Gradient Wells

## Groundwater Analysis - General Chemistry

Sample Location	Date	EPA 300.0							SM 2320B	
		Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Bromide (mg/L)	Nitrogen (mg/L)	P (mg/L)	Sulfate (mg/L)	CO2 (mg/L)	ALK (mg/L)
MW #1	Aug-08	1.6	250			10		600		
	Aug-08	0.67	19	<0.10	0.14	1.2	<0.50	130	250	280
	Aug-07	0.74	16	<0.10	<0.50	1.9	<0.50	160	270	290
	Aug-06	0.65	17	1.2	<0.50	NR	<0.50	190	240	270
MW #13	Aug-05	0.68	31	<0.10	<0.50	2.1	<0.50	190	300	300
	Aug-08	0.16	240	0.58	3.6	6	<0.50	1100	1000	970
	Aug-07	0.2	310	<0.10	4	7.8	<0.50	1100	1000	960
	Aug-06	0.12	310	8.3	3.7	NR	<0.50	1100	910	960
MW #26	Aug-05	0.15	320	0.23	4.6	6.1	<0.50	1000	1000	1000
	Aug-08	0.34	390	<1.0	5.5	<0.10	<0.50	<0.50	1100	1000
	Aug-07	0.38	330	<0.10	5.4	<0.10	<0.50	0.52	1200	1000
	Aug-06	0.36	410	<0.50	5.2	NR	<0.50	0.68	990	960
MW #27	Aug-05	0.42	290	<0.50	4.5	<0.10	<0.50	<0.50	1000	1000
	Aug-08	0.47	170	<1.0	1.2	<0.10	<0.50	990	330	320
	Aug-07	0.76	110	<1.0	0.83	<0.10	<0.5	1300	350	290
	Aug-06	0.38	150	<0.50	1.1	NR	<0.5	1700	380	370
MW #32	Aug-05	0.24	260	<1.0	2.1	<0.1	<0.5	1000	600	600
	Aug-08	0.21	1000	<1.0	4.7	26	<0.50	1400	160	180
	Aug-07	0.36	1100	<1.0	4.7	15	<0.50	1300	180	190
	Aug-06	0.19	940	5.6	3.4	NR	<0.50	940	180	200
MW #33	Aug-05	0.27	710	<2.0	2.9	8.7	<0.50	780	250	250
	Aug-08	0.35	540	<1.0	2.7	19	<0.50	1100	130	140
	Aug-07	0.31	560	<1.0	3.0	26	<0.50	1300	150	160
	Aug-06	0.23	560	33	3.0	NR	<0.50	1600	130	140
Aug-05	0.3	560	<0.5	3.2	26	<0.50	<0.50	1500	160	160

WQCC 20 NMAC 6.2.3103

NS¹= Well is Dry or Not Enough Water to Sample- No Sample

NS² = Not Sampled due to approved Facility-Wide Monitoring Plan

NS³ = Sample Inadvertently not Collected this Sampling Event

NR¹= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR² = No Sample Required per OCD and NMED pre-2007 Conditions



# Cross - Gradient Wells

## Groundwater Analysis - Total Metals

EPA Method 6010B, EPA Method 7470: Mercury											40 CFR 141.61 MCL										
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Cr (mg/L)	Lead (mg/L)	Se (mg/L)	Silver (mg/L)	Mercury (mg/L)												
MW #1	Aug-08	0.01	1	0.005	0.05	0.05	0.05	0.05	0.002												
	Aug-08	<0.020	<0.020	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
	Aug-07	<0.020	0.086	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
	Aug-06	<0.020	0.023	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
MW #13	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	<0.006	<0.005	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>												
	Aug-08	<0.020	0.026	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
	Aug-07	<0.020	0.026	<0.002	0.006	0.006	<0.050	<0.005	<0.0002												
	Aug-06	<0.020	0.025	<0.002	<0.006	0.0078	<0.050	<0.005	<0.0002												
MW #26	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	0.012	<0.005	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>												
	Aug-08	<0.020	2.3	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
	Aug-07	<0.020	2.3	<0.002	<0.006	0.009	<0.050	<0.005	<0.0002												
	Aug-06	<0.020	2.2	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
MW #27	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	<0.006	<0.005	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>												
	Aug-08	<0.020	0.028	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
	Aug-07	<0.020	0.09	<0.002	<0.006	0.011	<0.050	<0.005	<0.0002												
	Aug-06	<0.020	0.038	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
MW #32	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	<0.006	<0.005	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>												
	Aug-08	<0.020	0.026	<0.002	<0.006	<0.006	<0.050	<0.005	<0.0002												
	Aug-07	<0.020	0.037	<0.002	<0.006	<0.006	<0.050	<0.005	<0.0002												
	Aug-06	<0.020	0.032	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
MW #33	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	<0.006	<0.005	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>												
	Aug-08	<0.020	<0.020	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
	Aug-07	<0.020	0.26	<0.002	<0.006	0.007	<0.050	<0.005	<0.0002												
	Aug-06	<0.020	0.017	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002												
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	<0.006	<0.005	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>												

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample - No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Cross - Gradient Wells

## Groundwater Analysis - Dissolved Metals

EPA Method 6020A for Uranium - EPA Method 6010B for All Other Metals																
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Se (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)
MW #1	Aug-08	<0.02	<0.02	<0.002	NS <sup>3</sup>	<0.006	<0.02	<0.005	NS <sup>3</sup>	0.022	NS <sup>3</sup>	<0.05	<0.005	NS <sup>3</sup>	0.002	<0.05
	Aug-07	<0.02	0.023	<0.002	63	<0.006	<0.02	<0.005	16	0.027	2	<0.05	<0.005	78	<0.1	<0.05
	Aug-06	<0.02	0.023	<0.002	74	<0.006	<0.02	<0.005	18	0.09	2.4	<0.05	<0.005	120	<0.1	0.047
	Aug-05	<0.02	0.022	<0.002	68	<0.006	0.14	<0.005	18	0.14	2.7	<0.05	<0.005	140	<0.1	<0.005
MW #13	Aug-08	<0.02	0.026	<0.002	NS <sup>3</sup>	<0.006	<0.02	<0.005	NS <sup>3</sup>	1.4	NS <sup>3</sup>	<0.025	<0.005	NS <sup>3</sup>	0.009	<0.05
	Aug-07	<0.02	0.027	<0.002	270	<0.006	0.047	<0.005	81	1.4	3.6	<0.05	<0.005	640	<0.1	<0.05
	Aug-06	<0.02	0.025	<0.002	250	0.0063	<0.02	0.0078	82	1.1	3.6	<0.05	<0.005	620	<0.1	0.061
	Aug-05	<0.02	0.028	<0.002	240	<0.006	<0.02	<0.005	85	1.1	3.8	<0.05	<0.005	570	<0.1	0.0088
MW #26	Aug-08	<0.02	2.3	<0.002	NS <sup>3</sup>	<0.006	6.9	<0.005	NS <sup>3</sup>	3	NS <sup>3</sup>	<0.025	<0.005	NS <sup>3</sup>	<0.001	<0.05
	Aug-07	<0.2	2.3	<0.002	110	<0.006	6.3	<0.005	38	3.2	3	<0.05	<0.005	450	<0.1	<0.05
	Aug-06	<0.02	2.2	<0.002	10	<0.006	6.8	<0.005	38	3.1	3	<0.05	<0.005	450	<0.1	0.048
	Aug-05	<0.02	1.9	<0.002	92	<0.006	6.3	<0.005	32	2.8	2.8	<0.05	<0.005	430	<0.1	0.17
MW #27	Aug-08	<0.02	0.028	<0.002	NS <sup>3</sup>	<0.006	1.5	<0.005	NS <sup>3</sup>	4.6	NS <sup>3</sup>	<0.025	<0.005	NS <sup>3</sup>	0.002	0.058
	Aug-07	<0.02	0.021	<0.002	330	<0.006	10	<0.005	41	9.6	2.6	<0.05	<0.005	350	<0.1	<0.05
	Aug-06	<0.02	0.038	<0.002	360	<0.006	7.4	<0.005	52	8	3.7	<0.05	<0.005	440	<0.1	0.005
	Aug-05	<0.02	0.063	<0.002	290	<0.006	3.4	<0.005	45	2.7	3.4	<0.05	<0.005	430	<0.1	0.0066
MW #32	Aug-08	<0.02	0.026	<0.002	NS <sup>3</sup>	<0.006	<0.02	<0.005	NS <sup>3</sup>	<0.002	NS <sup>3</sup>	<0.025	<0.005	NS <sup>3</sup>	0.01	<0.05
	Aug-07	<0.02	0.028	<0.002	350	<0.006	<0.02	<0.005	51	0.002	3.5	<0.05	<0.005	820	<0.1	<0.05
	Aug-06	<0.02	0.032	<0.002	260	<0.006	<0.02	<0.005	38	<0.002	3.1	<0.05	<0.005	700	<0.1	0.046
	Aug-05	<0.02	0.026	<0.002	200	<0.006	<0.02	<0.005	32	<0.002	3	<0.05	<0.005	580	<0.1	0.011
MW #33	Aug-08	<0.02	<0.02	<0.002	NS <sup>3</sup>	<0.006	<0.02	<0.005	NS <sup>3</sup>	<0.002	NS <sup>3</sup>	<0.025	<0.005	NS <sup>3</sup>	0.007	<0.05
	Aug-07	<0.02	<0.02	<0.002	270	<0.006	<0.02	<0.005	37	0.009	4.1	<0.05	<0.005	620	<0.1	<0.05
	Aug-06	<0.02	0.017	<0.002	320	<0.006	<0.020	<0.005	47	0.0077	4.6	<0.05	<0.005	660	<0.1	0.12
	Aug-05	<0.02	0.019	<0.002	340	<0.006	<0.02	<0.005	48	0.0065	4.9	<0.05	<0.005	640	<0.1	0.012

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample- No Sample  
 NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan  
 NS<sup>3</sup> = Sample Inadvertently not Analyzed this Sampling Event

NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

## Cross - Gradient Wells

### Groundwater Analysis - Semi-Volatile Organic Compounds

EPA Method 8270B				
Sample Location	Date	Isophorone (mg/L)	2- Methyl naphthalene (mg/L)	Naphthalene (mg/L)
		0.071 <sup>2</sup>		0.03 <sup>1</sup>
MW #26	Aug-08	0.013	0.013	0.06
	Aug-07	0.012		0.051

1 - WQCC 20 NMAC 6.2.3103

2 - USEPA Region VI Human Health Medium - Specific Screening Level 2008

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Downgradient Wells

## Groundwater Analysis - Organics

Sample Location	Date	April 2007 - EPA Method 8021B August 2007 & April/August 2008 - EPA Method 8260B					EPA Method 8015B	
		Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
		0.005	0.75	0.70	0.62		1.72	
MW #11	Aug-08	0.0038	<0.001	0.0022	<0.0015	0.019	9.6	3.4
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	0.97	<0.01	<0.01	<0.015	0.022	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	3.9	<0.01	0.038	0.16	<0.025	NR <sup>2</sup>	NR <sup>2</sup>
MW #12	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-08	<0.001	<0.001	<0.001	<0.003	<0.0015	<1.0	<0.05
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	NR <sup>2</sup>	NR <sup>2</sup>
MW #34	Aug-08	0.0033	<0.001	<0.001	0.0017	0.0026	3.9	1.4
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	0.018	<0.001	<0.001	0.0079	0.0046	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	0.014	<0.005	<0.005	0.044	<0.012	NR <sup>2</sup>	NR <sup>2</sup>
MW #35	Aug-08	<0.002	<0.002	<0.002	<0.003	<0.002	1.6	0.54
	Apr-08	<0.001	<0.001	<0.001	<0.003	0.0018	2.1	0.52
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	<0.001	<0.001	<0.001	0.003	<0.0025	NR <sup>2</sup>	NR <sup>2</sup>
MW #37	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	1.5	0.11
	Apr-08	<0.001	<0.001	<0.001	<0.003	>0.0015	2.3	0.15
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	NR <sup>2</sup>	NR <sup>2</sup>
MW #38	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-08	<0.001	<0.001	<0.001	<0.003	0.0024	1.2	0.073
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	NR <sup>2</sup>
	Apr-07	<0.001	<0.001	<0.001	<0.002	0.004	NR <sup>2</sup>	NR <sup>2</sup>

WQCC 20 NMAG 6.2.3103 40 CFR 141.61 (Benzene and Ethylbenzene)  
 TPH Screening Guidelines Table 2a (DRO)

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Downgradient Wells

## Groundwater Analysis - General Chemistry

Sample Location	Date	EPA 300.0							SM 2320B		
		Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Bromide (mg/L)	Nitrogen (mg/L)	P (mg/L)	Sulfate (mg/L)	CO2 (mg/L)	ALK (mg/L)	
MW #11	Aug-08	0.57	110	<1.0	1.4	<0.10	<0.50	1.1	1100	1100	
	Aug-07	0.57	96	<1.0	1.03	<0.10	<0.50	10	1300	1000	
	Aug-06	0.1	82	<1.0	1	<0.10	<0.50	19	1100	1100	
	Aug-05	0.56	85	<0.10	1.4	<0.10	<0.50	20	1100	1100	
	Aug-08	0.5	8.3	<0.10	<0.10	<0.10	<0.50	130	270	280	
MW #12	Aug-07	0.39	19	<0.10	<0.50	<0.10	<0.50	830	250	260	
	Aug-06	0.36	19	<0.10	<0.50	<0.10	<0.50	140	260	290	
	Aug-05	0.43	100	<0.10	0.75	<0.10	<0.50	2400	310	310	
	Aug-08	0.83	110	<0.10	1.3	<0.10	<0.50	9.9	740	750	
	Aug-07	0.83	100	<1.0	1.3	<0.10	<0.50	68	880	840	
MW #34	Aug-06	0.95	60	<1.0	0.8	<0.10	<0.50	27	730	760	
	Aug-05	0.81	100	<0.1	1.2	0.1	<0.50	9	1100	1200	
	Aug-08	0.76	110	<0.1	1.3	<0.10	<0.50	3.6	830	870	
	Aug-07	0.71	100	<1.0	1	<0.10	<0.50	4.3	820	820	
	Aug-06	0.48	180	<1.0	2.3	<0.10	<0.50	3.2	980	1000	
MW #35	Aug-05	0.45	100	<0.1	1.2	0.1	<0.50	3.2	1100	1100	
	Aug-08	0.79	230	<0.10	2.9	<0.10	<0.50	34	760	820	
	Aug-07	0.75	320	3.7	<1.0	<0.10	<0.50	37	870	890	
	Aug-06	0.45	390	<1.0	4.2	<0.10	<0.50	290	720	8	
	Aug-05	0.48	150	<0.1	2.1	<0.10	<0.50	52	960	960	
MW #37	Aug-08	0.78	60	<0.10	0.67	<0.10	<0.50	150	570	600	
	Aug-07	1	43	<0.10	0.5	<0.10	<0.50	89	610	630	
	Aug-06	0.67	96	<0.10	1.1	<0.10	<0.50	490	600	640	
	Aug-05	0.62	100	<0.1	1.1	<0.10	<0.5	310	720	720	
	Aug-08	0.78	60	<0.10	0.67	<0.10	<0.50	150	570	600	

WQCC 20 NMAC 6.2.3103

NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample - No Sample

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NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

# Downgradient Wells

## Groundwater Analysis - Total Metals

		EPA Method 6010B, EPA Method 7470: Mercury								40 CFR 141.62 MCL	
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Cr (mg/L)	Lead (mg/L)	Se (mg/L)	Silver (mg/L)	Mercury (mg/L)		
MW #11	Aug-08	<0.020	0.7	<0.002	0.009	0.0074	<0.25	<0.005	<0.0002		
	Aug-07	<0.020	0.75	<0.002	<0.006	0.019	<0.050	<0.005	<0.0002		
	Aug-06	<0.020	0.69	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002		
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	<0.006	0.011	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>		
MW #12	Aug-08	<0.020	0.06	<0.002	0.011	<0.005	<0.050	<0.005	<0.0002		
	Aug-07	<0.020	0.19	<0.002	0.93	0.03	<0.050	<0.005	<0.0002		
	Aug-06	<0.020	0.04	<0.002	0.0078	<0.005	<0.050	<0.005	<0.0002		
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	4.1	0.21	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>		
MW #34	Aug-08	<0.020	0.57	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002		
	Aug-07	<0.020	0.55	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002		
	Aug-06	<0.020	0.44	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002		
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	0.011	0.0078	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>		
MW #35	Aug-08	<0.020	0.65	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002		
	Aug-07	0.022	0.86	<0.002	<0.006	0.008	<0.050	<0.005	<0.0002		
	Aug-06	0.027	0.71	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002		
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	0.017	0.017	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>		
MW #37	Aug-08	<0.020	0.43	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002		
	Aug-07	<0.020	0.65	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002		
	Aug-06	<0.020	0.3	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002		
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	0.082	0.072	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>		
MW #38	Aug-08	<0.020	0.17	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002		
	Aug-07	<0.020	0.14	<0.002	<0.006	0.020	<0.050	<0.005	<0.0002		
	Aug-06	<0.020	0.093	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002		
	Aug-05	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	0.340	0.180	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>		

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Downgradient Wells

## Groundwater Analysis - Dissolved Metals

		EPA Method 6020A for Uranium - EPA Method 6010B for All Other Metals														WQCC 20NMAC6.2.3.103			
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Se (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)			
MW #11	Aug-08	<0.02	0.7	<0.002	NS <sup>3</sup>	<0.006	12	0.007	NS <sup>3</sup>	1.9	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	<0.001	<0.05			
	Aug-07	<0.02	0.6	<0.002	98	0.008	9.5	0.011	22	1.9	1.5	<0.05	<0.005	400	<0.1	<0.05			
	Aug-06	<0.02	0.69	<0.002	100	<0.006	9.3	<0.005	22	1.8	1.4	<0.05	<0.005	390	<0.1	0.051			
	Aug-05	<0.02	0.73	<0.002	96	<0.006	7.6	<0.005	22	1.6	1.7	<0.05	<0.005	380	<0.1	0.014			
MW #12	Aug-08	<0.02	0.06	<0.002	NS <sup>3</sup>	<0.006	0.021	<0.005	NS <sup>3</sup>	0.065	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	0.003	0.095			
	Aug-07	<0.02	0.05	<0.002	120	<0.006	0.042	<0.005	25	0.46	1.1	<0.05	<0.005	220	<0.1	<0.05			
	Aug-06	<0.02	0.04	<0.002	73	0.0078	0.069	<0.005	14	0.3	1.1	<0.05	<0.005	100	<0.1	0.036			
	Aug-05	<0.02	0.07	<0.002	370	0.022	0.55	<0.005	97	0.64	2.8	<0.05	<0.005	560	<0.1	0.022			
MW #34	Aug-08	<0.02	0.57	<0.002	NS <sup>3</sup>	<0.006	4.1	<0.005	NS <sup>3</sup>	3.1	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	<0.001	<0.05			
	Aug-07	<0.02	0.25	<0.002	130	<0.006	1.4	0.005	30	2.0	2.9	<0.05	<0.005	520	<0.1	<0.05			
	Aug-06	<0.02	0.71	<0.002	110	<0.006	3	<0.005	12	2.4	<1.0	<0.05	<0.005	310	<0.1	0.11			
	Aug-05	<0.02	0.54	<0.002	120	<0.006	4.9	<0.005	20	4.2	1.2	<0.05	<0.005	390	<0.1	0.1			
MW #35	Aug-08	<0.02	0.65	<0.002	NS <sup>3</sup>	<0.006	2.6	<0.005	NS <sup>3</sup>	1.4	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	<0.001	<0.05			
	Aug-07	<0.02	0.71	<0.002	79	<0.006	3.5	<0.005	16	1.7	1.9	<0.05	<0.005	340	<0.1	<0.05			
	Aug-06	0.027	0.71	<0.002	110	<0.006	2.8	<0.005	26	2.9	2.1	<0.05	<0.005	410	<0.1	0.061			
	Aug-05	<0.02	0.54	<0.002	120	<0.006	5.9	<0.005	22	3	2.9	<0.05	<0.005	310	<0.1	0.095			
MW #37	Aug-08	<0.02	0.43	<0.002	NS <sup>3</sup>	<0.006	0.95	<0.005	NS <sup>3</sup>	1.2	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	<0.001	0.15			
	Aug-07	<0.02	0.47	<0.002	110	<0.006	1.5	0.005	23	1.7	2.9	<0.05	<0.005	460	<0.1	<0.05			
	Aug-06	<0.02	0.3	<0.002	180	<0.006	1.3	<0.005	44	2.9	3.5	<0.05	<0.005	550	<0.1	0.032			
	Aug-05	<0.02	0.38	<0.002	120	<0.006	2.5	<0.005	20	1.4	4.2	<0.05	<0.005	370	<0.1	0.13			
MW #38	Aug-08	<0.02	0.17	<0.002	NS <sup>3</sup>	<0.006	2.2	<0.005	NS <sup>3</sup>	2.6	NS <sup>3</sup>	<0.25	<0.005	NS <sup>3</sup>	0.002	<0.05			
	Aug-07	<0.02	0.11	<0.002	95	<0.006	1.2	<0.005	16	2	2.5	<0.05	<0.005	230	<0.1	<0.05			
	Aug-06	<0.02	0.093	<0.002	210	<0.006	3.1	<0.005	36	3.5	4.3	<0.05	<0.005	290	<0.1	0.059			
	Aug-05	<0.02	0.18	<0.002	200	<0.006	7.1	<0.005	32	3.7	4.4	<0.05	<0.005	270	<0.1	0.016			

NS<sup>3</sup> = Well is Dry or Not Enough Water to Sample - No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>1</sup> = Sample Inadvertently not Analyzed this Sampling Event

NR<sup>2</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>1</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

## Downgradient Wells

### Groundwater Analysis - Semi-Volatile Organic Compounds

EPA Method 8270B				
Sample Location	Date	2-methylnaphthalene (mg/L)	Naphthalene (mg/L)	WQCC 20 NMAC 6.2,3,103
			0.03	
MW #11	Aug-08	0.01	0.032	
	Aug-07	0.013	0.043	

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions



# San Juan River Bluff

## Groundwater Analysis - Organics

		April 2007 - EPA Method 8021B August 2007 & April/August 2008 - EPA Method 8260B					MGC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene)
Sample Location	Date	Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	
		0.005	0.75	0.70	0.62		
Outfall #2	Aug-08	<0.001	<0.001	<0.001	<0.003	<0.0015	
	Apr-08	<0.001	<0.001	<0.001	<0.003	<0.0015	
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	
Outfall #3	Aug-08	<0.001	<0.001	<0.001	<0.003	<0.0015	
	Apr-08	<0.001	<0.001	<0.001	<0.003	<0.0015	
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	

NS¹= Well is Dry or Not Enough Water to Sample- No Sample

NS² = Not Sampled due to approved Facility-Wide Monitoring Plan

NS³ = Sample Inadvertently not Collected this Sampling Event

NR¹= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR² = No Sample Required per OCD and NMED pre-2007 Conditions

# San Juan River Bluff

## Groundwater Analysis - General Chemistry

Sample Location	Date	EPA 300.0						SM 2320B		
		Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Bromide (mg/L)	Nitrogen (mg/L)	P (mg/L)	Sulfate (mg/L)	CO2 (mg/L)	ALK (mg/L)
Outfall #2	Aug-08	1.6	250	<0.10	<0.10	<0.10	<0.50	770	240	250
	Apr-08	0.7	14	<0.01	<0.01	<0.01	<0.50	110	320	360
	Aug-07	1.1	13	<0.10	<0.10	0.17	<0.50	290	270	280
	Aug-06	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Aug-08	0.38	6.1	<0.10	<0.10	0.36	<0.50	100	110	120
Outfall #3	Apr-08	0.48	23	<0.01	0.15	2.8	<0.50	170	260	280
	Aug-07	0.25	5.5	<0.5	<0.5	<0.5	<0.5	64	97	110
	Aug-06	0.61	37	<0.1	<0.5	5.2	<0.5	270	270	270

WQCC 20 NMAC 6.2.3.103

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample  
 NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan  
 NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event  
 NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# San Juan River Bluff

## Groundwater Analysis - Total Metals

Sample Location	Date	EPA Method 8010B, EPA Method 7470: Mercury							
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Cr (mg/L)	Lead (mg/L)	Se (mg/L)	Silver (mg/L)	Mercury (mg/L)
Outfall #2	Aug-08	0.01	1	0.005	0.05	0.05	0.05	0.05	0.002
	Aug-08	<0.02	0.11	<0.002	<0.006	0.0062	<0.05	<0.005	<0.0002
	Apr-08	<0.020	0.039	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002
	Aug-07	<0.020	0.051	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002
	Aug-06	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
Outfall #3	Aug-08	<0.02	0.08	>0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	Apr-08	<0.020	0.033	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002
	Aug-07	<0.020	0.081	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002
	Aug-06	<0.020	0.063	<0.002	<0.006	<0.005	<0.050	<0.005	<0.0002

40 CFR 141.62 MCL

NS¹= Well is Dry or Not Enough Water to Sample- No Sample  
 NS²= Not Sampled due to approved Facility-Wide Monitoring Plan  
 NS³= Sample Inadvertently not Collected this Sampling Event  
 NR¹= No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR²= No Sample Required per OCD and NMED pre-2007 Conditions

# San Juan River Bluff

## Groundwater Analysis - Dissolved Metals

		EPA Method 6010B															
Sample Location	Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Mg (mg/L)	Mn (mg/L)	K (mg/L)	Se (mg/L)	Silver (mg/L)	Sodium (mg/L)	Uranium (mg/L)	Zinc (mg/L)	
Outfall #2	Aug-08	<0.02	0.088	<0.002	NS <sup>1</sup>	<0.006	<0.02	<0.005	NS <sup>3</sup>	<0.002	NS <sup>3</sup>	<0.25	<0.005	NS <sup>2</sup>	0.004	0.079	
	Apr-08	<0.02	0.042	<0.002	92	<0.006	<0.02	<0.005	21	<0.002	1.9	<0.05	<0.005	70	<0.10	<0.05	
	Aug-07	<0.020	0.05	<0.002	120	<0.006	<0.02	<0.005	26	0.0065	1.6	<0.05	<0.005	74	<0.10	<0.05	
	Aug-06	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	
Outfall #3	Aug-08	<0.02	0.075	<0.002	NS <sup>3</sup>	<0.006	<0.02	<0.005	NS <sup>3</sup>	<0.002	NS <sup>3</sup>	<0.05	<0.005	NS <sup>3</sup>	0.001	<0.05	
	Apr-08	<0.02	0.034	<0.002	88	<0.006	<0.02	<0.005	20	<0.002	1.8	<0.05	<0.005	87	<0.10	0.068	
	Aug-07	<0.020	0.063	<0.002	39	<0.006	<0.020	<0.005	7	<0.002	1.5	<0.05	<0.005	20	<0.10	<0.05	
	Aug-06	<0.020	0.063	<0.002	41	<0.006	<0.02	<0.005	7.3	<0.002	1.8	<0.05	<0.005	23	<0.10	0.024	

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Collected this Sampling Event

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# Bluff Seeps

## Groundwater Analysis

WQCC 20 NMAC 6.2.3103														
Sample Location	Date	EPA 8260B					EPA 300.0					SM 2320B		
		Benzene (mg/L)	Toluene (mg/L)	EthylBenz (mg/L)	Xylene (mg/L)	MTBE (mg/L)	Fluoride (mg/L)	Chloride (mg/L)	Nitrite (mg/L)	Nitrogen (mg/L)	P (mg/L)	Sulfate (mg/L)	CO2 (mg/L)	ALK (mg/L)
		0.005	0.75	0.70	0.62		1.6	250		10		600		
Seep 1	Aug-08	<0.001	<0.001	<0.001	<0.003	0.042	0.35	370	<1.0	<0.10	<0.50	1500	250	250
	Apr-08	<0.001	<0.001	<0.001	<0.002	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
Seep 3	Aug-08	<0.001	<0.001	<0.001	<0.003	<0.015	0.8	370	<1.0	<0.10	<0.50	2500	160	160
	Apr-08	NS¹	NS¹	NS¹	NS¹	NS¹	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
Seep 6	Aug-08	<0.001	<0.001	<0.001	<0.003	0.006	0.47	2500	<1.0	<0.10	<0.50	960	370	370
	Apr-08	<0.001	<0.001	<0.001	<0.002	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
Seep 7	Aug-08	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Apr-08	<0.001	<0.001	<0.001	<0.002	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
Seep 9	Aug-08	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Apr-08	<0.001	<0.001	<0.001	<0.002	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
WQCC 20 NMAC 6.2.3103														
40CFR141.61 (Benzene and Ethylbenzene)														

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled - Sample was taken before implementation of Facility-Wide Monitoring Plan

**Tank #33 Effluent Analytical Results  
2008**

Date	Benzene (ppb)	Toluene (ppb)	EthylBen (ppb)	Xylene (ppb)	MTBE (ppb)	Toxicity Characteristic Regulatory Level for Benzene
	500					
3/24/2008	760	1600	170	4700	<1.0	
4/10/2008	130	360	56	1200	NA	
4/15/2008	130	200	<1.0	1100	<1.0	
4/21/2008	140	220	30	1200	<1.0	
4/28/2008	190	170	6.7	1600	3.6	
5/5/2008	160	150	7.9	1600	3.6	
5/12/2008	100	42	<1.0	1100	<1.0	
5/19/2008	93	25	<1.0	970	8.5	
5/27/2008	49	21	<1.0	790	<1.0	
6/2/2008	130	84	6.8	1100	<1.0	
6/9/2008	91	110	25	2100	<1.0	
6/16/2008	11	6.1	<1.0	140	1.00	
6/26/2008	31	17	<1.0	180	<1.0	
7/2/2008	4.9	5.1	4.9	55	1.9	
7/7/2008	41	42	2.8	410	2.3	
7/16/2008	56	43	<1.0	380	<1.0	
7/22/2008	75	54	<1.0	450	<1.0	
7/31/2008	71	39	<1.0	430	<1.0	
8/5/2008	25	19	<1.0	210	1.6	
8/14/2008	110	120	6.6	540	1.9	
8/19/2008	3.6	2.2	<1.0	24	2.0	
8/25/2008	25	10	<1.0	790	1.7	
9/9/2008	10	2.3	<1.0	16	1.8	
9/18/2008	8.2	14	<1.0	6.7	1.7	
9/25/2008	4.6	<1.0	<1.0	<2.0	1.7	
10/1/2008	3.2	<1.0	<1.0	<2.0	1.5	
10/8/2008	2.5	<1.0	<1.0	<2.0	1.5	
10/15/2008	2.2	<1.0	<1.0	<2.0	1.6	
10/22/2008	2.2	<1.0	<1.0	<2.0	2.2	
10/27/2008	2.3	<1.0	<1.0	<2.0	2.4	
11/3/2008	1.5	<1.0	<1.0	<2.0	2.4	
12/2/2008	1.7	<1.0	<1.0	2.6	<1.0	

# San Juan River Analysis - 2008

## Organics

EPA Method 8021B - 8260 for Aug. 05, 2008 only							
mg/L	Sampling Event	Date Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery	
Benzene (mg/L)	Semi-Annual	08/05/08	<0.001	<0.001	<0.001	<0.001	0.005 (mg/L) 40CFR141.61
	Semi-Annual	03/12/08	<0.001	<0.001	<0.001	<0.001	
	4th Quarter	12/07/07	<0.0005	<0.0005	<0.0005	<0.0005	
	3rd Quarter	07/10/07	<0.0005	<0.0005	<0.0005	<0.0005	
Toluene (mg/L)	Semi-Annual	08/05/08	<0.001	<0.001	<0.001	<0.001	0.75 (mg/L) WQCC-20 NMAC 6.2.3103
	Semi-Annual	03/12/08	<0.001	<0.001	<0.001	<0.001	
	4th Quarter	12/07/07	<0.0005	<0.0005	<0.0005	<0.0005	
	3rd Quarter	07/10/07	<0.0005	<0.0005	<0.0005	<0.0005	
EthylBen (mg/L)	Semi-Annual	08/05/08	<0.001	<0.001	<0.001	<0.001	0.7 (mg/L) 40CFR141.61
	Semi-Annual	03/12/08	<0.001	<0.001	<0.001	<0.001	
	4th Quarter	12/07/07	<0.0005	<0.0005	<0.0005	<0.0005	
	3rd Quarter	07/10/07	<0.0005	<0.0005	<0.0005	<0.0005	
Xylene (mg/L)	Semi-Annual	08/05/08	<0.003	<0.003	<0.003	<0.003	0.62 (mg/L) WQCC-20 NMAC 6.2.3103
	Semi-Annual	03/12/08	<0.002	<0.002	<0.002	<0.002	
	4th Quarter	12/07/07	<0.0005	<0.0005	<0.0005	<0.0005	
	3rd Quarter	07/10/07	<0.0005	<0.0005	<0.0005	<0.0005	
MTBE (mg/L)	Semi-Annual	08/05/08	<0.0015	<0.0015	<0.0015	<0.0015	
	Semi-Annual	03/12/08	<0.0025	<0.0025	<0.0025	<0.0025	
	4th Quarter	12/07/07	<0.0025	<0.0025	<0.0025	<0.0025	
	3rd Quarter	07/10/07	<0.0025	<0.0025	<0.0025	<0.0025	
DRO (mg/L)	Semi-Annual	08/05/08	<1.0	<1.0	<1.0	<1.0	1.72 (mg/L) TPH Screening Guidelines Table 2a
	Semi-Annual	03/12/08	<1.0	<1.0	<1.0	<1.0	
	4th Quarter	12/07/07	<1.0	<1.0	<1.0	<1.0	
	3rd Quarter	07/10/07	<1.0	<1.0	<1.0	<1.0	
MRO (mg/L)	Semi-Annual	08/05/08	<5.0	<5.0	<5.0	<5.0	
	Semi-Annual	03/12/08	<5.0	<5.0	<5.0	<5.0	
	4th Quarter	12/07/07	<5.0	<5.0	<5.0	<5.0	
	3rd Quarter	07/10/07	<5.0	<5.0	<5.0	<5.0	
GRO (mg/L)	Semi-Annual	08/05/08	<0.050	<0.050	<0.050	<0.050	
	Semi-Annual	03/12/08	<0.050	<0.050	<0.050	<0.050	
	4th Quarter	12/07/07	<0.050	<0.050	<0.050	<0.050	
	3rd Quarter	07/10/07	<0.050	<0.050	<0.050	<0.050	

# San Juan River Analysis - 2008

## General Chemistry

								WQCC 20/NMAC 6.2.3103
mg/L	Sampling Event	Date Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery		
EPA Method 300.0	Fluoride	Semi-Annual	08/05/08	0.20	0.20	0.24	0.19	1.60
		Semi-Annual	03/12/08	0.19	0.20	0.20	0.21	
		4th Quarter	12/07/07	0.20	0.19	0.20	0.20	
		3rd Quarter	07/10/07	0.19	0.19	0.22	0.19	
	Chloride	Semi-Annual	08/05/08	3.0	2.9	5.5	3.1	250
		Semi-Annual	03/12/08	2.7	2.7	2.8	2.8	
		4th Quarter	12/07/07	3.4	3.4	4.4	3.6	
		3rd Quarter	07/10/07	2.8	2.8	4.7	2.8	
	Nitrite	Semi-Annual	08/05/08	<0.10	<0.10	<0.10	<0.10	
		Semi-Annual	03/12/08	<0.10	<0.10	<0.10	<0.10	
		4th Quarter	12/07/07	<0.10	2.1	<0.10	<0.10	
		3rd Quarter	07/10/07	<0.10	<0.10	<0.10	<0.10	
	Bromide	Semi-Annual	08/05/08	<0.10	<0.10	<0.10	<0.10	
		Semi-Annual	03/12/08	<0.10	<0.10	<0.10	<0.10	
		4th Quarter	12/07/07	<0.50	<0.50	<0.50	<0.50	
		3rd Quarter	07/10/07	<0.50	<0.50	<0.50	<0.50	
	Phosphorous	Semi-Annual	08/05/08	<0.50	<0.50	<0.50	<0.50	
		Semi-Annual	03/12/08	<0.50	<0.50	<0.50	<0.50	
		4th Quarter	12/07/07	<0.50	<0.50	<0.50	<0.50	
		3rd Quarter	07/10/07	<0.50	<0.50	<0.50	<0.50	
	Sulfate	Semi-Annual	08/05/08	60	59	130	62	600
		Semi-Annual	03/12/08	52	53	53	59	
		4th Quarter	12/07/07	110	100	110	110	
		3rd Quarter	07/10/07	53	52	130	55	
EPA 160.1	TDS	Semi-Annual	08/05/08	190	200	360	200	1000
		Semi-Annual	03/12/08	240	260	480	260	
		4th Quarter	12/07/07	270	270	310	300	
		3rd Quarter	07/10/07	180	180	310	180	
EPA 310.1	CO3	Semi-Annual	08/05/08	<2.0	<2.0	<2.0	<2.0	
		Semi-Annual	03/12/08	<2.0	<2.0	<2.0	<2.0	
		4th Quarter	12/07/07	<2.0	<2.0	<2.0	<2.0	
		3rd Quarter	07/10/07	<2.0	<2.0	<2.0	<2.0	
	ALK	Semi-Annual	08/05/08	89	91	95	90	
		Semi-Annual	03/12/08	85	84	84	86	
		4th Quarter	12/07/07	100	95	94	100	
		3rd Quarter	07/10/07	83	83	110	64	
EPA 120.1	E.C. (umhos/cm)	Semi-Annual	08/05/08	300	290	450	300	
		Semi-Annual	03/12/08	280	280	280	300	
		4th Quarter	12/07/07	410	410	450	450	
		3rd Quarter	07/10/07	280	280	470	290	



# San Juan River Analysis - 2008

## Total Metals

EPA Method 6010, EPA Method 7470: Mercury							40CFR141.62
mg/L	Sampling Event	Date Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Down stream of Refinery	MCL
Arsenic	Semi-Annual	08/05/08	<0.020	<0.020	<0.020	<0.020	0.01
	Semi-Annual	03/12/08	<0.020	<0.020	<0.020	<0.020	
	4th Quarter	12/07/07	<0.020	<0.020	<0.020	<0.020	
	3rd Quarter	07/10/07	<0.020	<0.020	<0.020	<0.020	
Barium	Semi-Annual	08/05/08	0.16	0.17	0.13	0.16	1.0
	Semi-Annual	03/12/08	0.4	0.38	0.39	0.46	
	4th Quarter	12/07/07	0.073	0.071	0.069	0.071	
	3rd Quarter	07/10/07	0.068	0.067	0.064	0.066	
Cadmium	Semi-Annual	08/05/08	<0.002	<0.002	<0.002	<0.002	0.005
	Semi-Annual	03/12/08	<0.002	<0.002	<0.002	<0.002	
	4th Quarter	12/07/07	<0.002	<0.002	<0.002	<0.002	
	3rd Quarter	07/10/07	<0.002	<0.002	<0.002	<0.002	
Chromium	Semi-Annual	08/05/08	<0.006	<0.006	<0.006	<0.006	0.05
	Semi-Annual	03/12/08	<0.006	<0.006	<0.006	<0.006	
	4th Quarter	12/07/07	<0.006	<0.006	<0.006	<0.006	
	3rd Quarter	07/10/07	<0.006	<0.006	<0.006	<0.006	
Lead	Semi-Annual	08/05/08	0.0057	<0.005	0.0065	<0.005	0.05
	Semi-Annual	03/12/08	0.0051	0.0066	0.0064	0.0056	
	4th Quarter	12/07/07	<0.005	<0.005	<0.005	<0.005	
	3rd Quarter	07/10/07	<0.005	<0.005	<0.005	<0.005	
Selenium	Semi-Annual	08/05/08	<0.050	<0.050	<0.050	<0.050	0.05
	Semi-Annual	03/12/08	<0.050	<0.050	<0.050	<0.050	
	4th Quarter	12/07/07	<0.050	<0.050	<0.050	<0.050	
	3rd Quarter	07/10/07	<0.050	<0.050	<0.050	<0.050	
Silver	Semi-Annual	08/05/08	<0.005	<0.005	<0.005	<0.005	
	Semi-Annual	03/12/08	<0.005	<0.005	<0.005	<0.005	
	4th Quarter	12/07/07	<0.005	<0.005	<0.005	<0.005	
	3rd Quarter	07/10/07	<0.005	<0.005	<0.005	<0.005	
Mercury	Semi-Annual	08/05/08	<0.0002	<0.0002	<0.0002	<0.0002	0.002
	Semi-Annual	03/12/08	<0.0002	<0.0002	<0.0002	<0.0002	
	4th Quarter	12/07/07	<0.0002	<0.0002	<0.0002	<0.0002	
	3rd Quarter	07/10/07	<0.0002	<0.0002	<0.0002	<0.0002	

# San Juan River Analysis- 2008

## Dissolved Metals

EPA Method 6010B							WQCC
mg/L	Sampling Event	Date Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery	20 NMAC 6:2.3103
Arsenic	Semi-Annual	08/05/08	<0.020	<0.020	<0.020	<0.020	0.10
	Semi-Annual	03/12/08	<0.020	<0.020	<0.020	<0.020	
	2nd Quarter	04/16/07	<0.020	<0.020	<0.020	<0.020	
	1st Quarter	02/08/07	<0.020	<0.020	<0.020	<0.020	
Barium	Semi-Annual	08/05/08	0.077	0.081	0.130	0.080	1.00
	Semi-Annual	03/12/08	0.086	0.080	0.085	0.081	
	4th Quarter	12/07/07	0.058	0.059	0.059	0.061	
	3rd Quarter	07/10/07	0.065	0.065	0.064	0.066	
Cadmium	Semi-Annual	08/05/08	<0.002	<0.002	<0.002	<0.002	0.01
	Semi-Annual	03/12/08	<0.002	<0.002	<0.002	<0.002	
	4th Quarter	12/07/07	<0.002	<0.002	<0.002	<0.002	
	3rd Quarter	07/10/07	<0.002	<0.002	<0.002	<0.002	
Calcium	Semi-Annual	08/05/08	33	34	39	34	
	Semi-Annual	03/12/08	28	28	29	28	
	4th Quarter	12/07/07	40	41	40	44	
	3rd Quarter	07/10/07	29	28	33	29	
Chromium	Semi-Annual	08/05/08	<0.006	<0.006	<0.006	<0.006	0.05
	Semi-Annual	03/12/08	0.007	<0.006	0.007	<0.006	
	4th Quarter	12/07/07	<0.006	<0.006	<0.006	<0.006	
	3rd Quarter	07/10/07	<0.006	<0.006	<0.006	<0.006	
Copper	Semi-Annual	08/05/08	<0.006	<0.006	<0.006	<0.006	1.00
	Semi-Annual	03/12/08	<0.006	<0.006	<0.006	<0.006	
	4th Quarter	12/07/07	<0.006	<0.006	<0.006	0.008	
	3rd Quarter	07/10/07	<0.006	<0.006	<0.006	<0.006	
Iron	Semi-Annual	08/05/08	0.059	0.068	0.074	0.09	1.00
	Semi-Annual	03/12/08	0.360	3.800	0.490	0.33	
	4th Quarter	12/07/07	0.070	0.024	<0.020	<0.020	
	3rd Quarter	07/10/07	<0.020	<0.020	<0.020	<0.020	
Lead	Semi-Annual	08/05/08	<0.005	<0.005	<0.005	<0.005	0.05
	Semi-Annual	03/12/08	<0.005	<0.005	<0.005	<0.005	
	4th Quarter	12/07/07	<0.005	<0.005	<0.005	<0.005	
	3rd Quarter	07/10/07	<0.005	<0.005	<0.005	<0.005	
Magnesium	Semi-Annual	08/05/08	5.5	5.7	7	5.5	
	Semi-Annual	03/12/08	4.5	4.9	4.7	4.5	
	4th Quarter	12/07/07	6.5	6.8	6.9	7	
	3rd Quarter	07/10/07	5.1	5.1	6.8	5.1	
Manganese	Semi-Annual	08/05/08	0.008	0.012	0.073	0.012	0.20
	Semi-Annual	03/12/08	0.040	0.037	0.038	0.035	
	4th Quarter	12/07/07	0.035	0.036	0.058	0.072	
	3rd Quarter	07/10/07	0.009	0.009	0.083	0.015	

# San Juan River Analysis- 2008

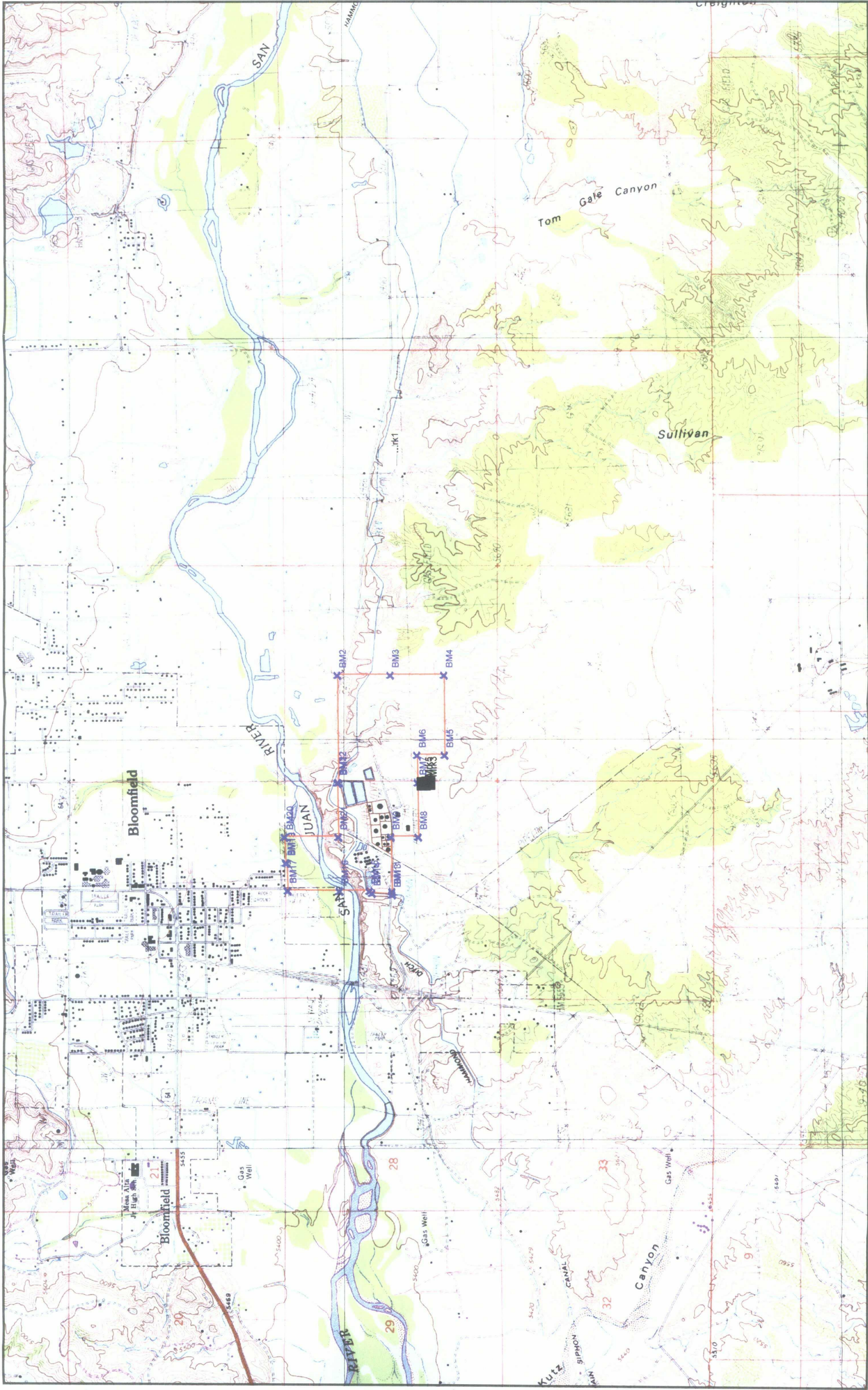
## Dissolved Metals

EPA Method 6010B							WQCC 20 NMAC 6.2.3103
mg/L	Sampling Event	Date Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery	
Potassium	Semi-Annual	08/05/08	1.8	1.8	2.0	1.9	
	Semi-Annual	03/12/08	1.7	2.3	1.8	1.7	
	4th Quarter	12/07/07	1.8	1.9	1.9	1.9	
	3rd Quarter	07/10/07	1.7	1.7	1.8	1.6	
Selenium	Semi-Annual	08/05/08	<0.050	<0.050	<0.050	<0.050	0.05
	Semi-Annual	03/12/08	<0.050	<0.050	<0.050	<0.050	
	4th Quarter	12/07/07	<0.050	<0.050	<0.050	<0.050	
	3rd Quarter	07/10/07	<0.050	<0.050	<0.050	<0.050	
Silver	Semi-Annual	08/05/08	<0.0050	<0.0050	<0.0050	<0.0050	0.05
	Semi-Annual	03/12/08	<0.0050	<0.0050	<0.0050	<0.0050	
	4th Quarter	12/07/07	<0.0050	<0.0050	<0.0050	<0.0050	
	3rd Quarter	07/10/07	<0.0050	<0.0050	<0.0050	<0.0050	
Sodium	Semi-Annual	08/05/08	19	19	49	20	
	Semi-Annual	03/12/08	19	21	20	21	
	4th Quarter	12/07/07	30	31	37	33	
	3rd Quarter	07/10/07	16	16	46	16	

## Section 10.0 Figures

<u>Title</u>	<u>Figure</u>
Vicinity Map.....	Figures 1
Facility Site Plan (11X17).....	Figure 2
Facility Site Plan.....	Figure 3
Groundwater Elevation and Flow Direction – February – 1 <sup>st</sup> QTR.....	Figure 4
Groundwater Elevation and Flow Direction – April – 2 <sup>nd</sup> QTR.....	Figure 5
Groundwater Elevation and Flow Direction – August 6 <sup>th</sup> – 3 <sup>rd</sup> QTR.....	Figure 6
Groundwater Elevation and Flow Direction – August 11 <sup>th</sup> – 3 <sup>rd</sup> QTR.....	Figure 7
Groundwater Elevation and Flow Direction – October – 4 <sup>th</sup> QTR.....	Figure 8
Product Thickness Map – February – 1 <sup>st</sup> QTR.....	Figure 9
Product Thickness Map – April – 2 <sup>nd</sup> QTR .....	Figure 10
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BTEX & MTBE Concentration Map – April.....	Figure 13
BTEX & MTBE Concentration Map – August.....	Figure 14
San Juan River Bluff – Seep Identification.....	Figure 15

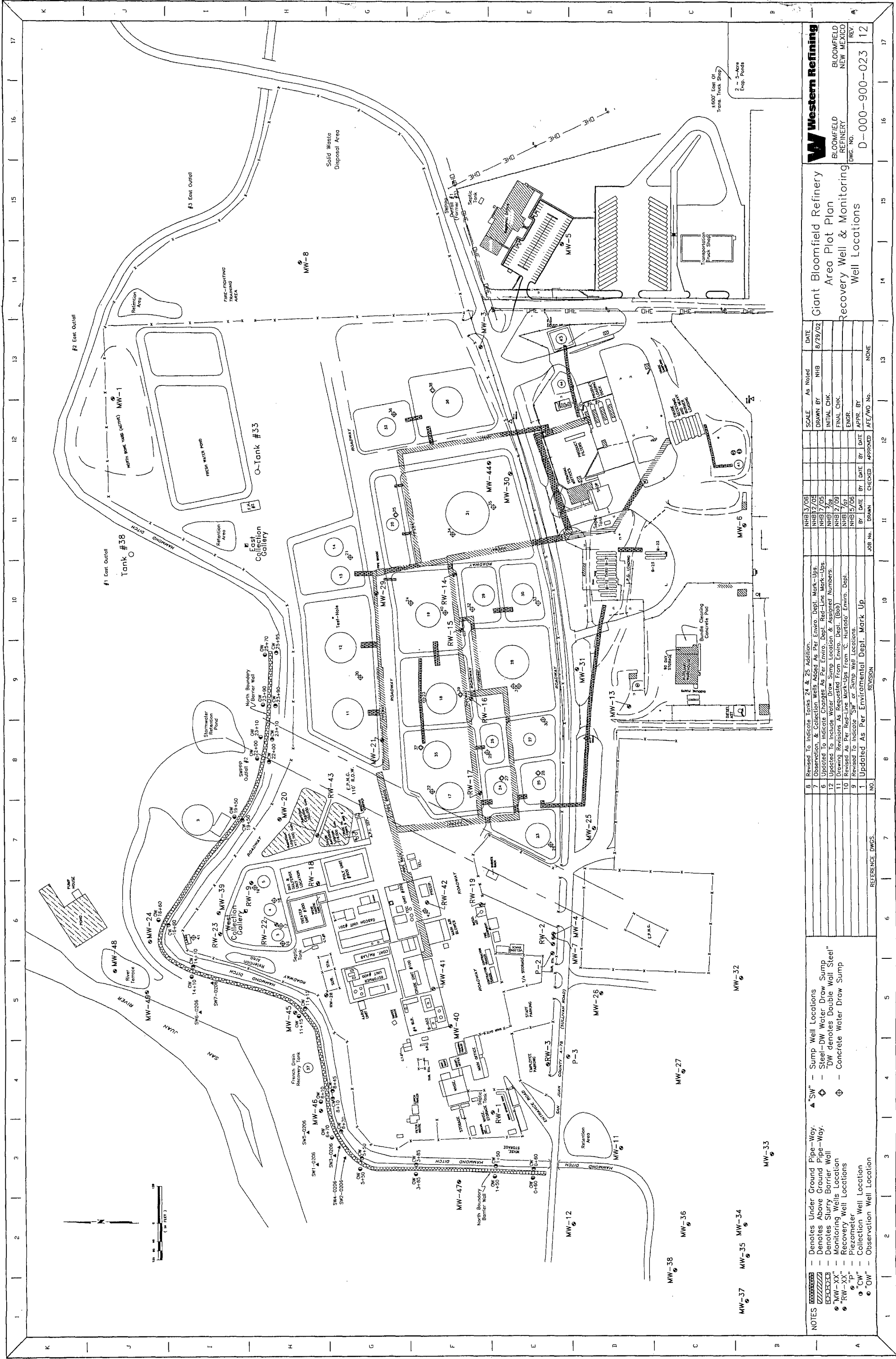




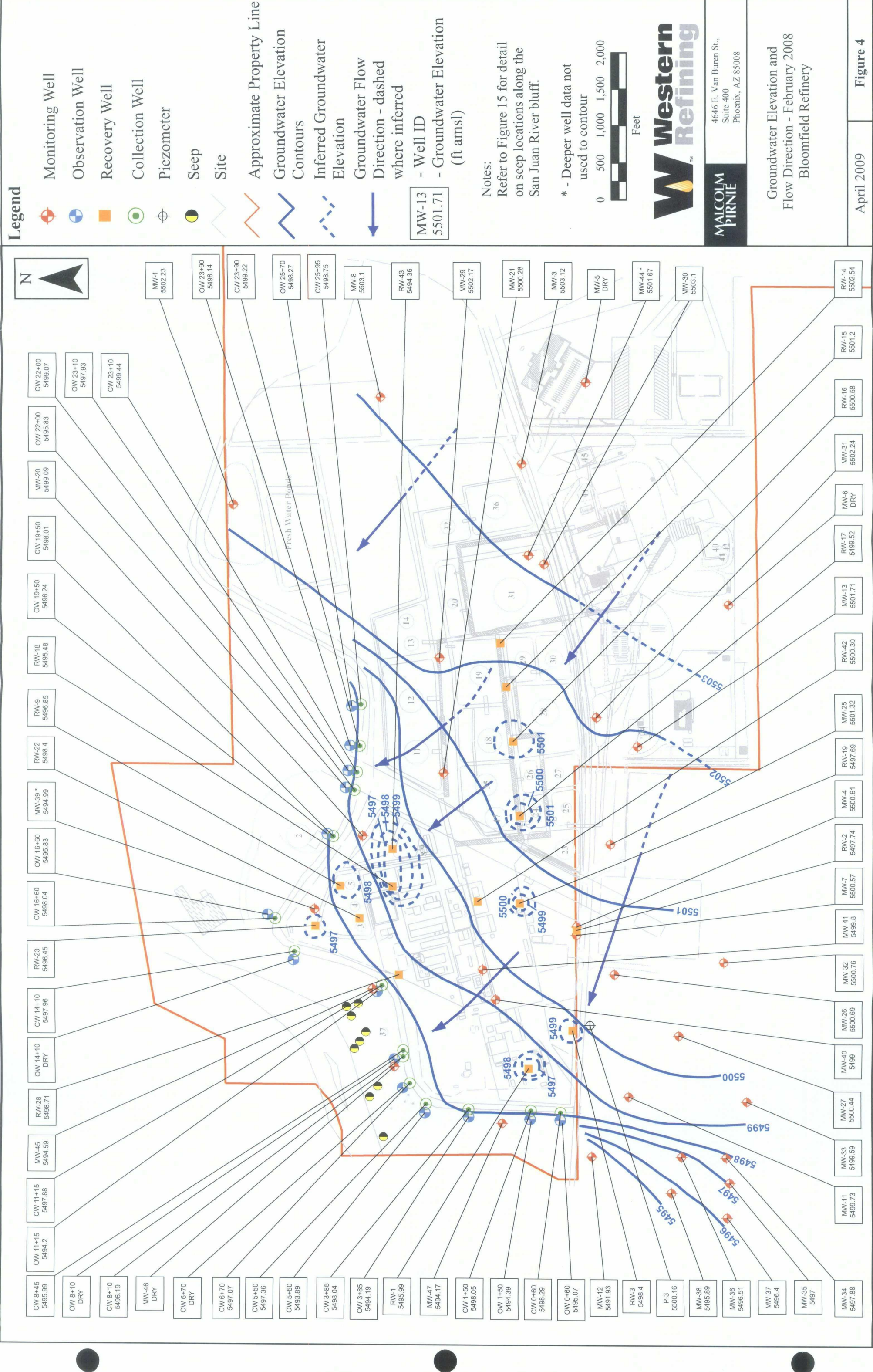
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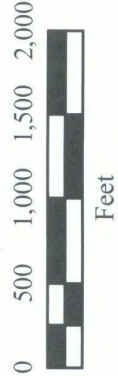


Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Piezometer
- Seep
- Site
- Approximate Property Line
- Groundwater Elevation Contours
- Inferred Groundwater Elevation
- Groundwater Flow Direction - dashed where inferred
- Well ID
- Groundwater Elevation (ft amsl)

Notes:  
Refer to Figure 15 for detail on seep locations along the San Juan River bluff.

\* - Deeper well data not used to contour

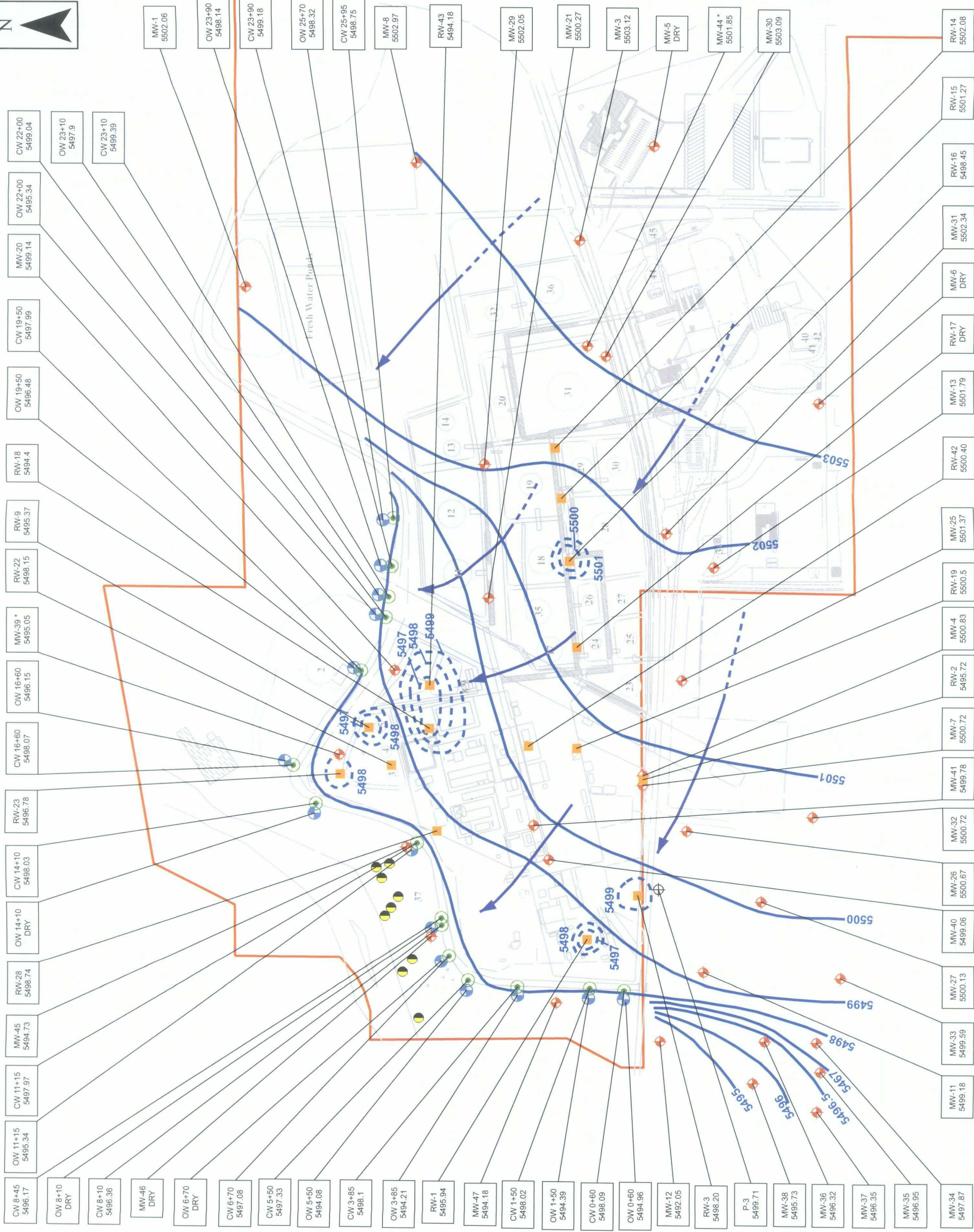


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Groundwater Elevation and  
Flow Direction - April 2008  
Bloomfield Refinery

April 2009

Figure 5





Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Piezometer
- Seep
- Site

- Approximate Property Line
- Groundwater Elevation Contours
- Inferred Groundwater Elevation
- Groundwater Flow Direction - dashed where inferred

MW-13  
5501.69

- Well ID  
- Groundwater Elevation (ft amsl)

Notes:  
Refer to Figure 15 for detail on seep locations along the San Juan River bluff.

\* - Deeper well data not used to contour



Feet



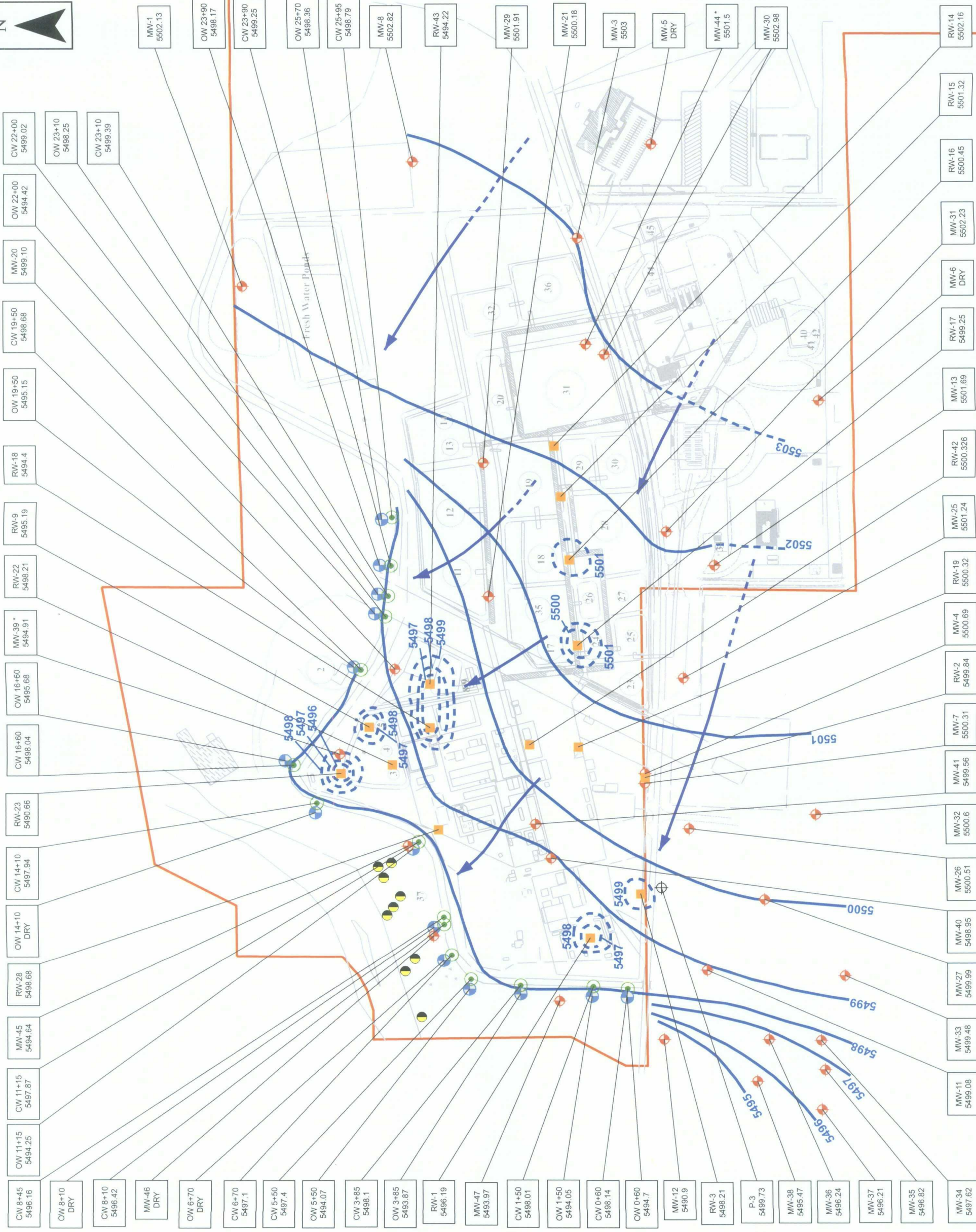
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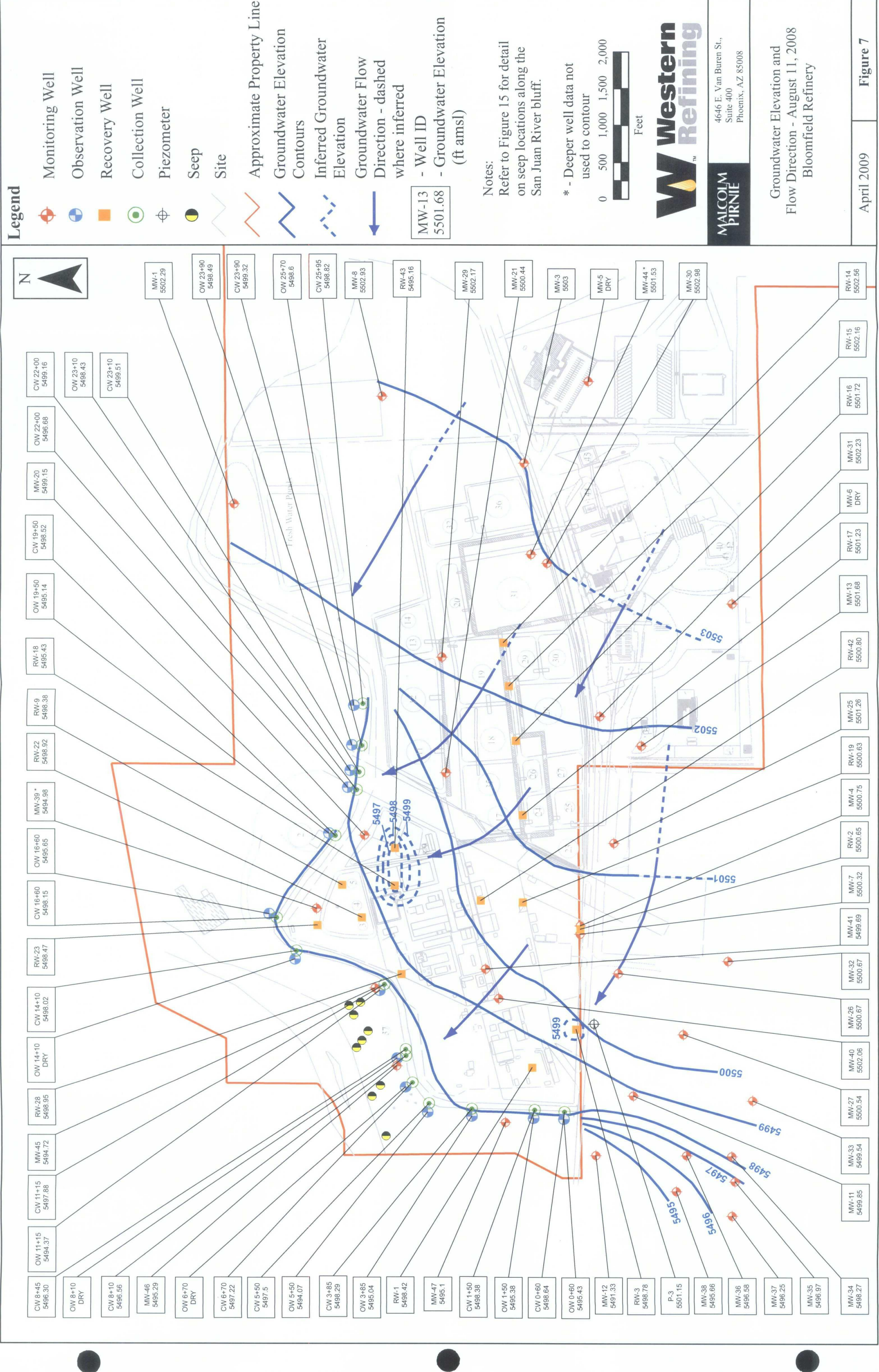
Groundwater Elevation and  
Flow Direction - August 6, 2008  
Bloomfield Refinery

April 2009

Figure 6









Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Piezometer
- Seep
- Site
- Approximate Property Line
- Groundwater Elevation Contours
- Inferred Groundwater Elevation
- Groundwater Flow Direction - dashed where inferred
- Well ID
- Groundwater Elevation (ft amsl)

Notes:  
Refer to Figure 15 for detail on seep locations along the San Juan River bluff.

\* - Deeper well data not used to contour



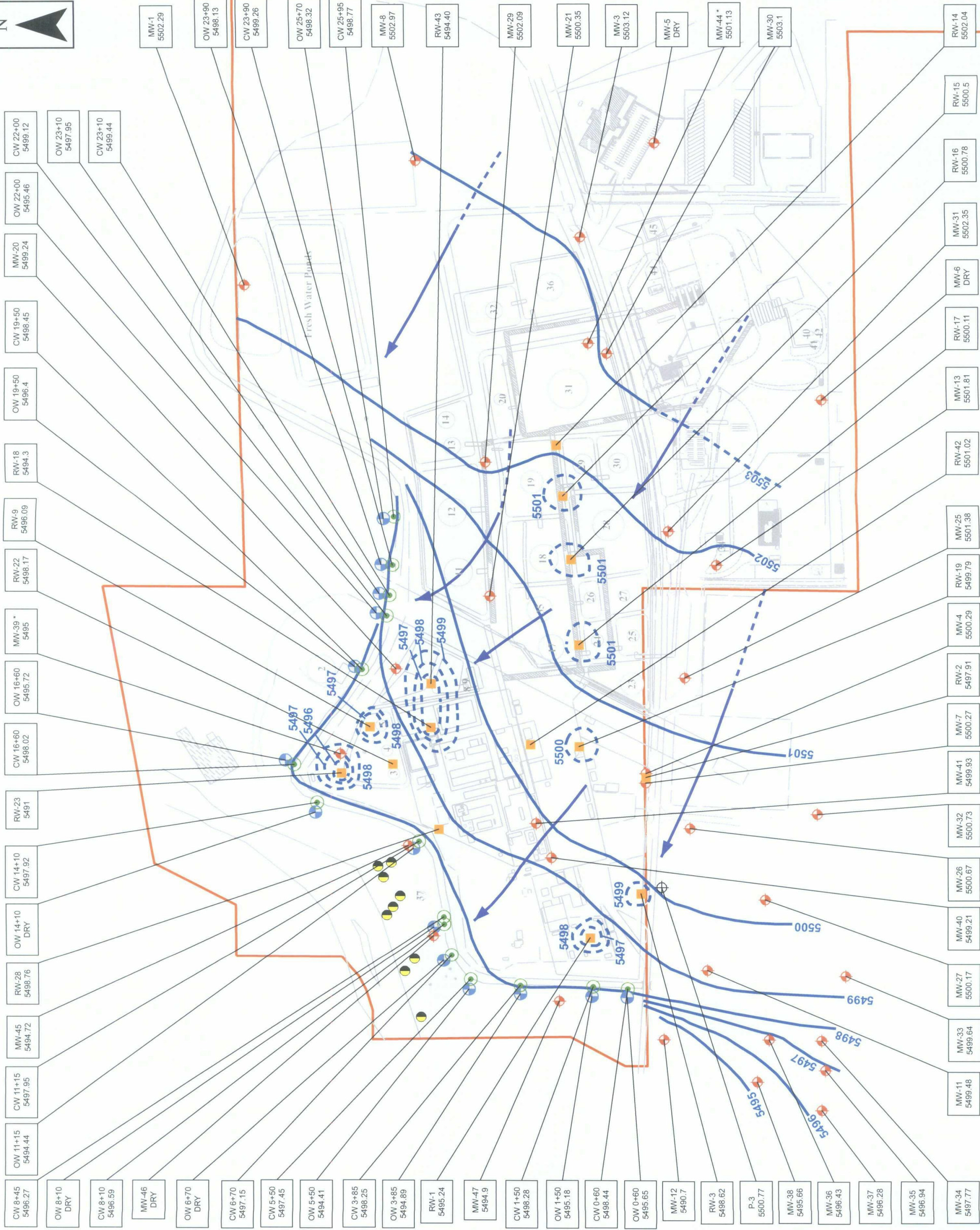
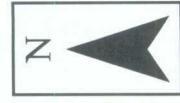
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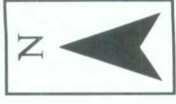
Groundwater Elevation and  
Flow Direction - October 2008  
Bloomfield Refinery

April 2009

Figure 8







Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- February 2008 Product Thickness
- Site
- Approximate Property Line
- MW-47  
0.1
  - Well ID
  - Product Thickness (feet)

Note:  
Free product measured in observation wells located outside the barrier wall were not contoured.



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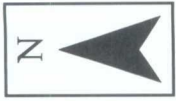
Product Thickness Map -  
February 2008  
Bloomfield Refinery

April 2009

Figure 9







Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- April 2008 Product Thickness
- Site
- Approximate Property Line
- MW-47 0.11 - Well ID
- 0.11 - Product Thickness (feet)

Note:  
Free product measured in observation wells located outside the barrier wall were not contoured.



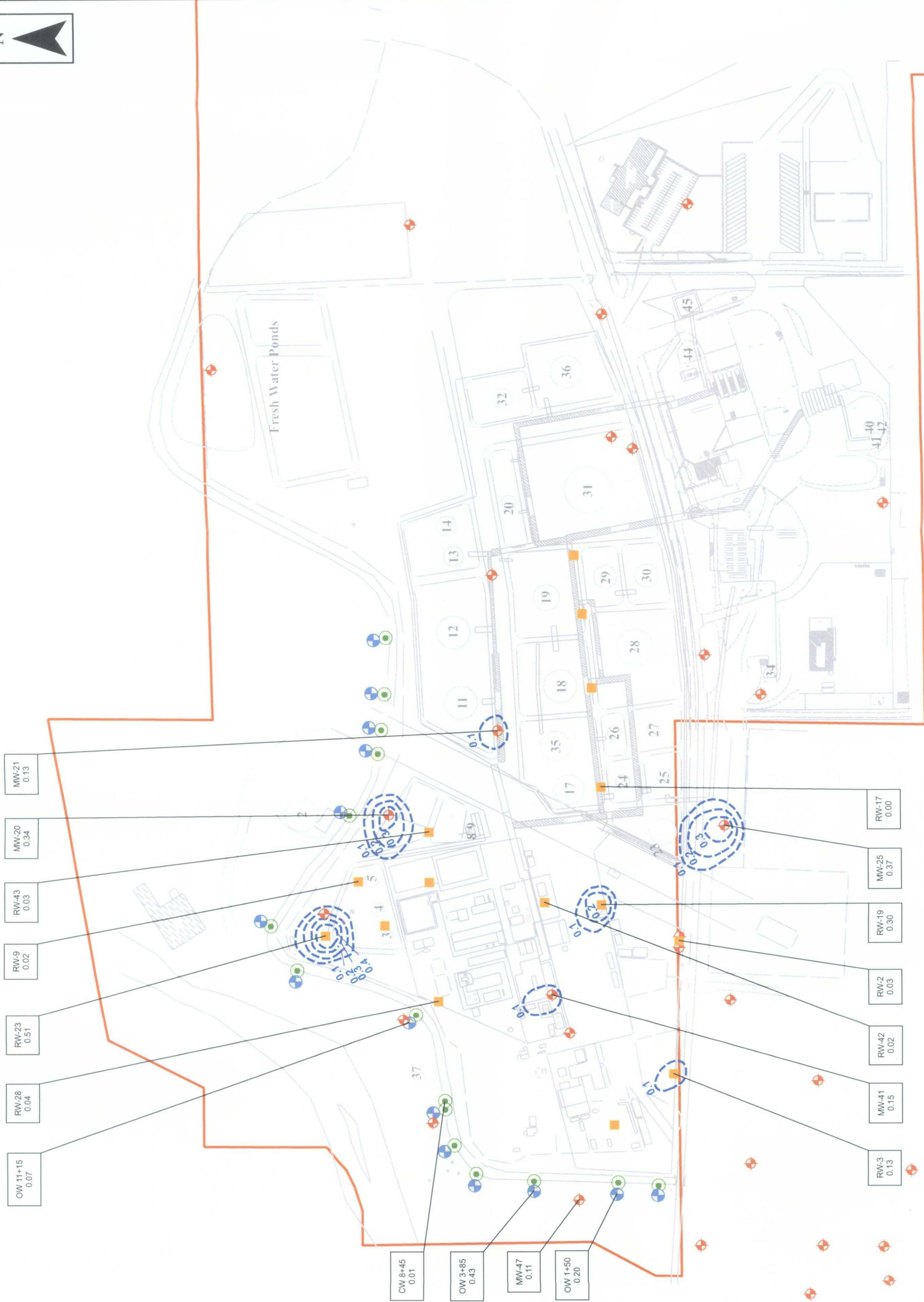
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Product Thickness Map -  
April 2008  
Bloomfield Refinery

April 2009

Figure 10







Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- August 2008 Product Thickness
- Site
- Approximate Property Line

MW-47  
0.62

- Well ID  
- Product Thickness (feet)

Note:  
Free product measured in observation wells located outside the barrier wall were not contoured.



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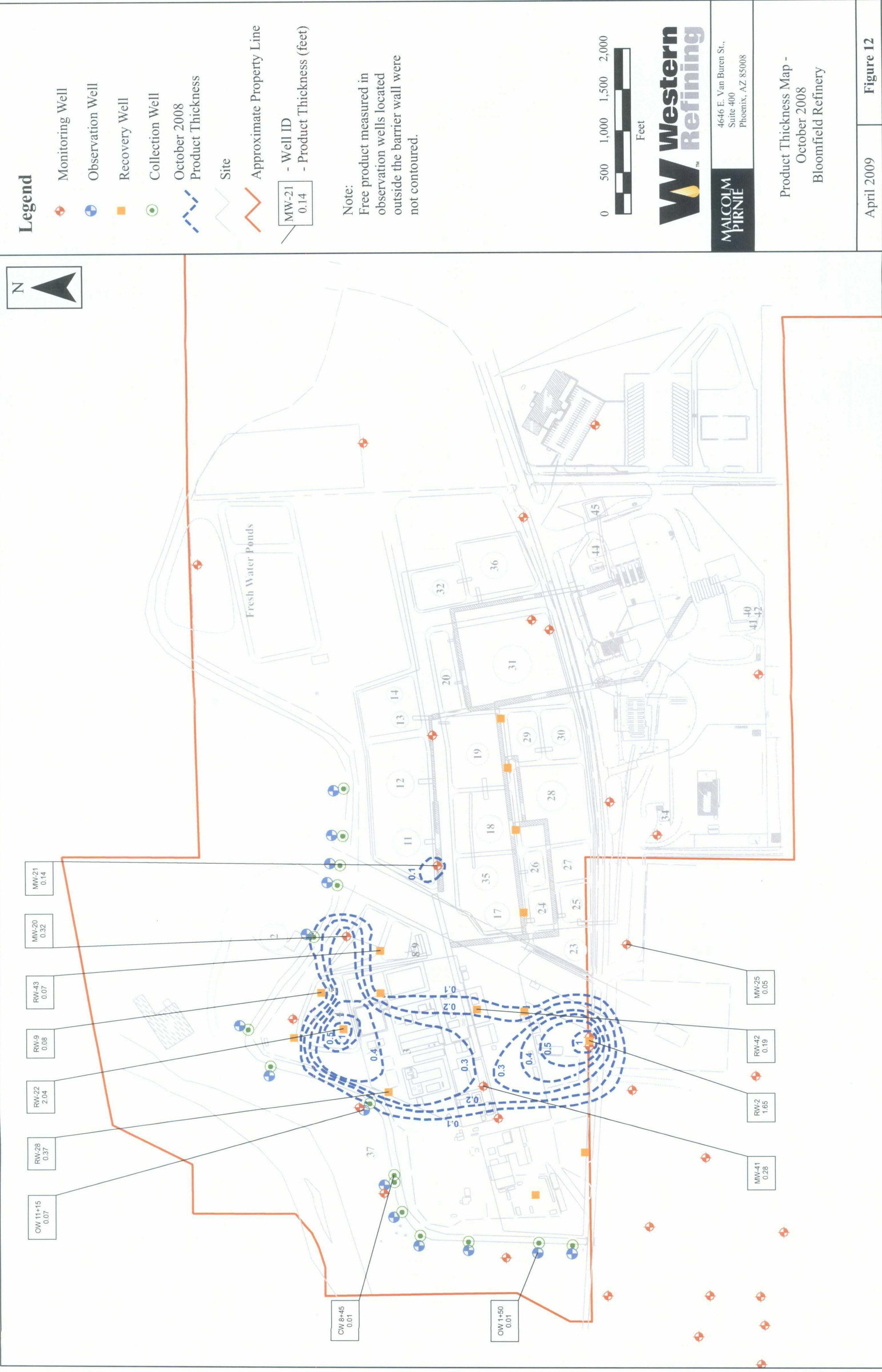
Product Thickness Map -  
August 2008  
Bloomfield Refinery

April 2009

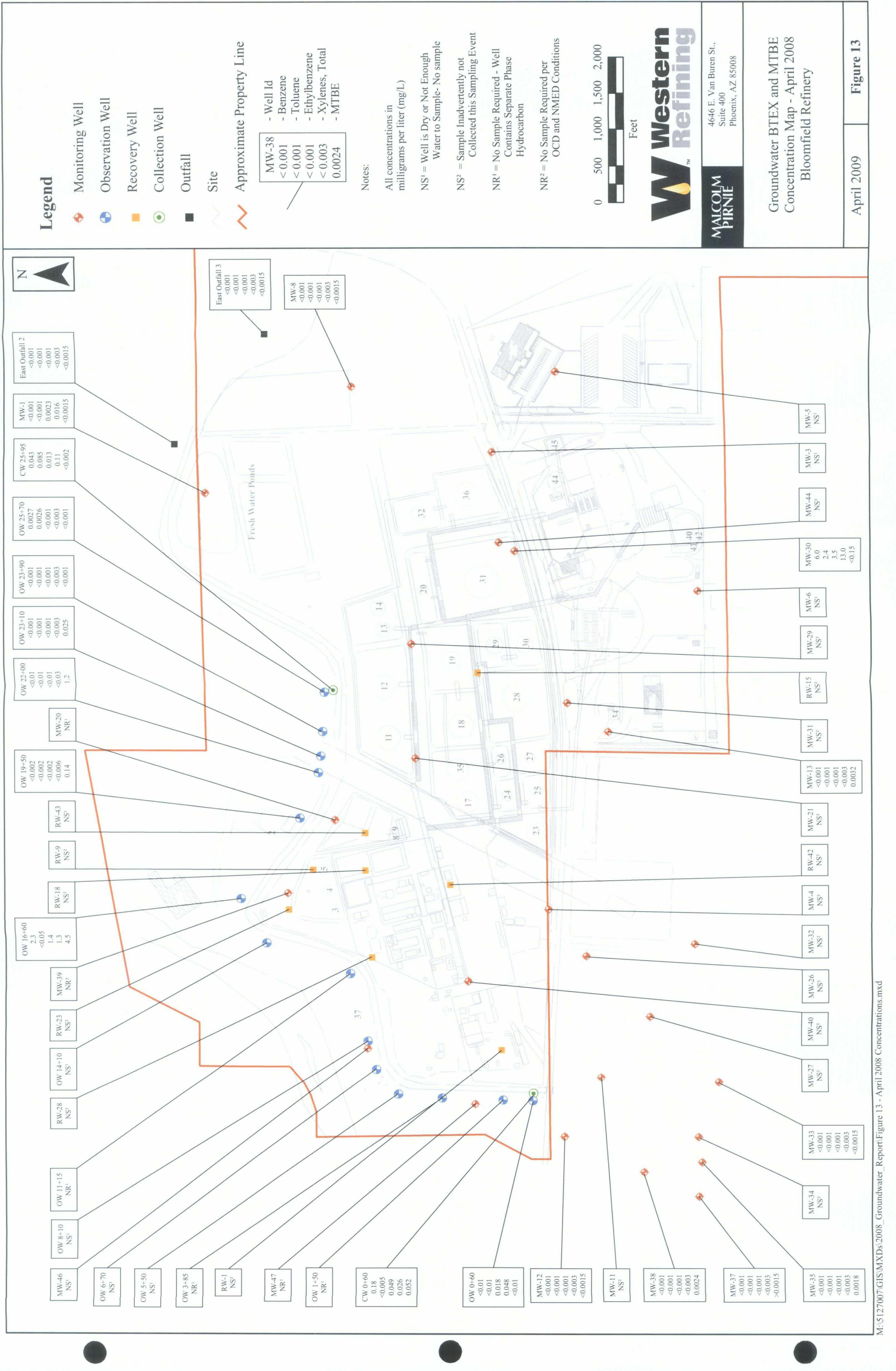
Figure 11











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Groundwater BTEX and MTBE  
Concentration Map - April 2008  
Bloomfield Refinery





Legend

- Monitoring Well
- Observation Well
- Recovery Well
- Collection Well
- Outfall
- Site
- Approximate Property Line

MW-38	- Well Id
<0.001	- Benzene
<0.001	- Toluene
<0.001	- Ethylbenzene
<0.0015	- Xylenes, Total
0.001	- MTBE

Notes:

All concentrations in milligrams per liter (mg/L)

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample- No sample Collected this Sampling Event

NS<sup>2</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>1</sup> = No Sample Required per OCD and NMED Conditions

NR<sup>2</sup> = No Sample Required per OCD and NMED Conditions



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Groundwater BTEX and MTBE  
Concentration Map - August 2008  
Bloomfield Refinery

April 2009

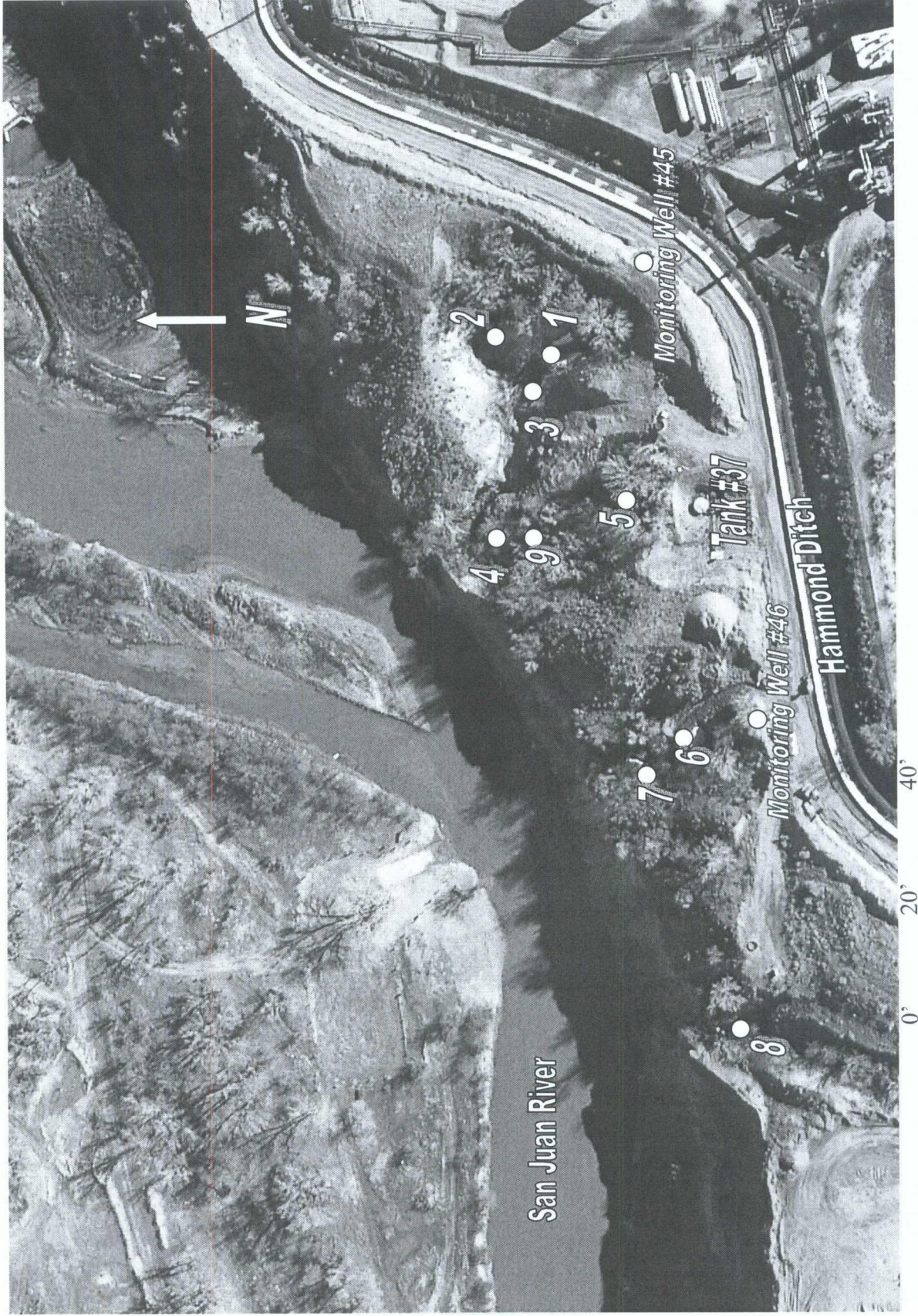
Figure 14



# San Juan River Bluff – Seep Identification

Seeps are Designated by Numbers 1-9

Figure 15

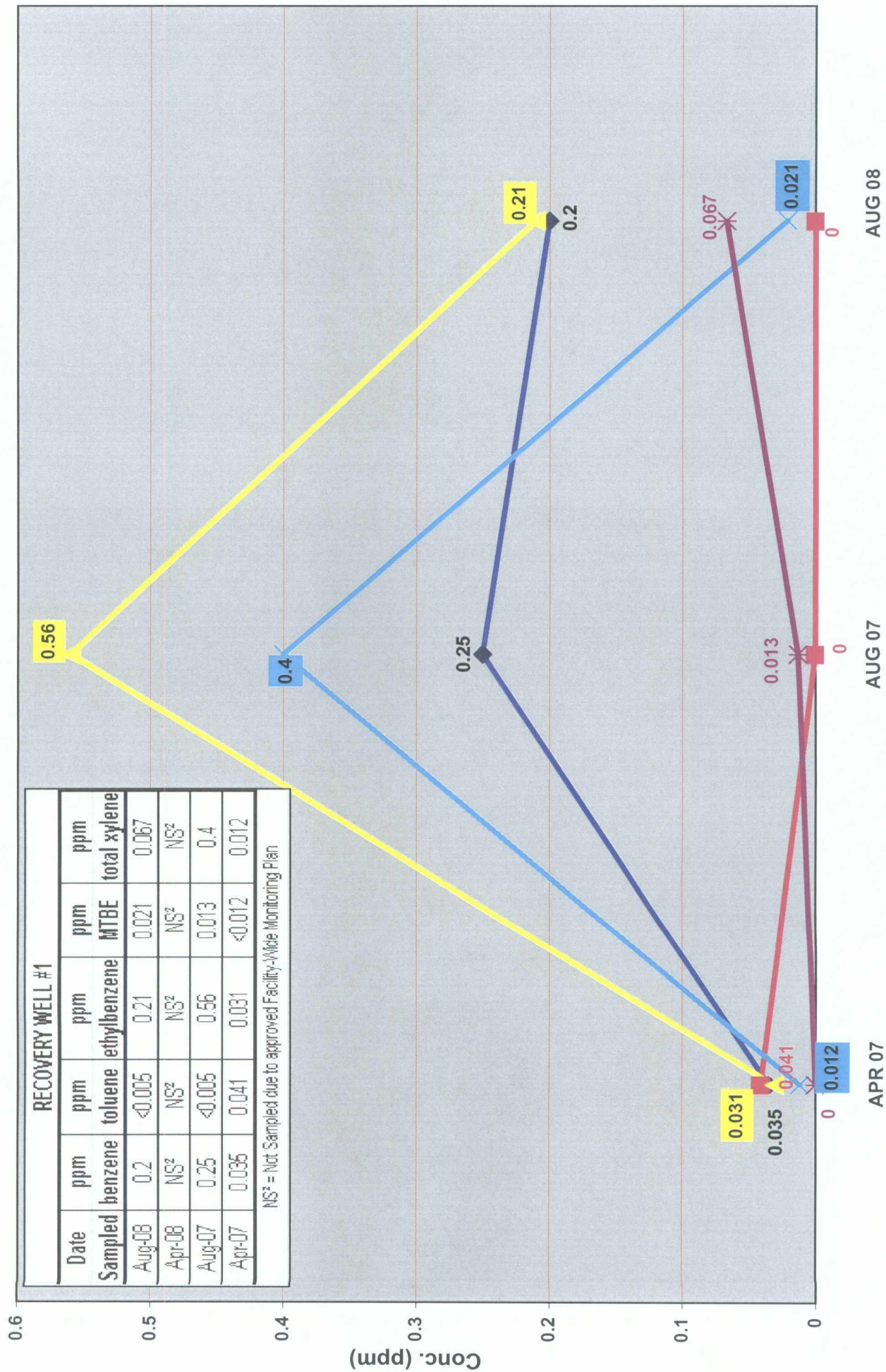


## Section 11.0    BTEX & MTBE Concentration vs Time

<u>Title</u>	<u>Tab</u>
Refinery Wells.....	12
Cross-gradient Wells.....	13
Downgradient Wells.....	14
San Juan River Bluff.....	15

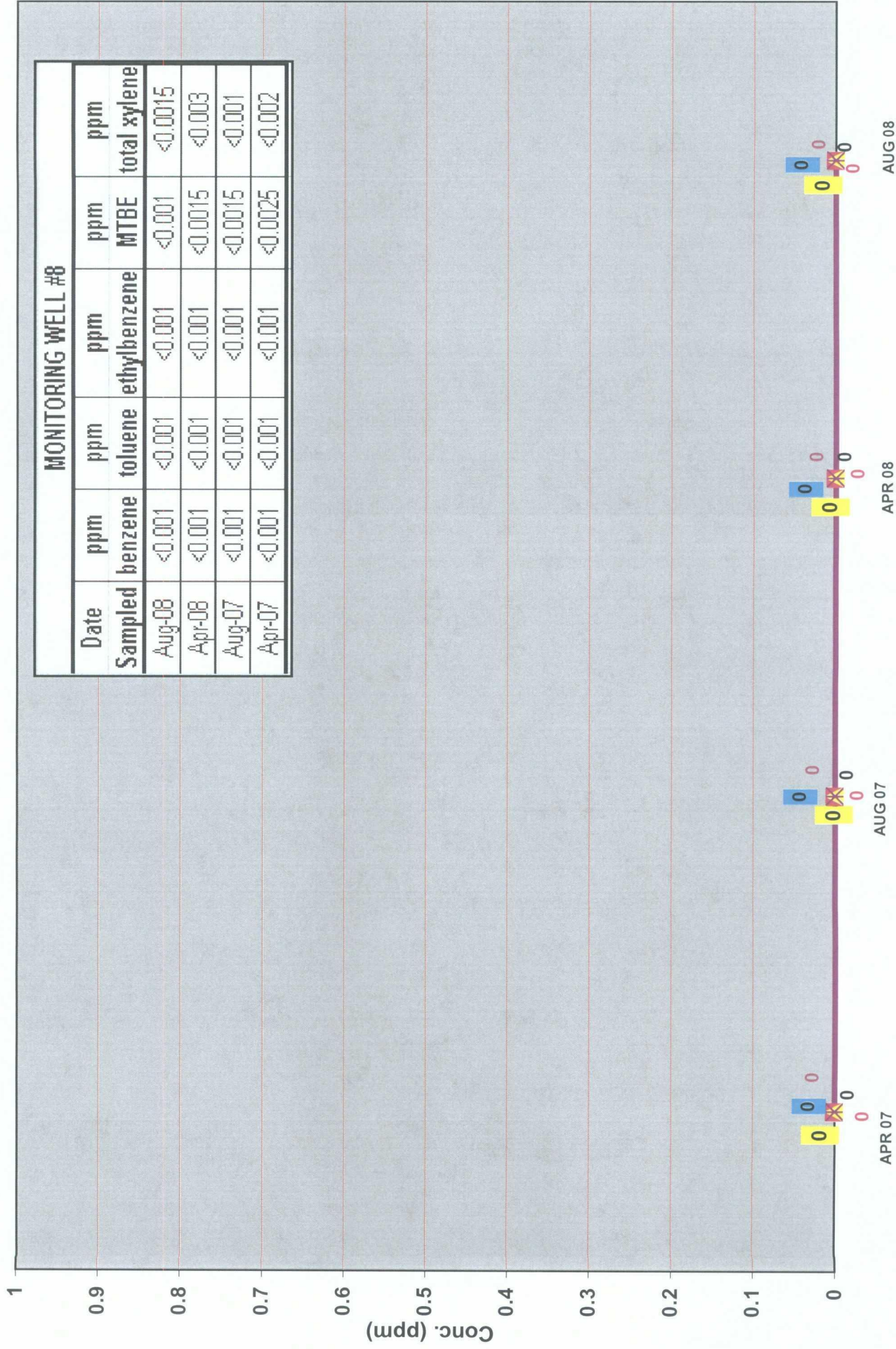


# Recovery Well #1



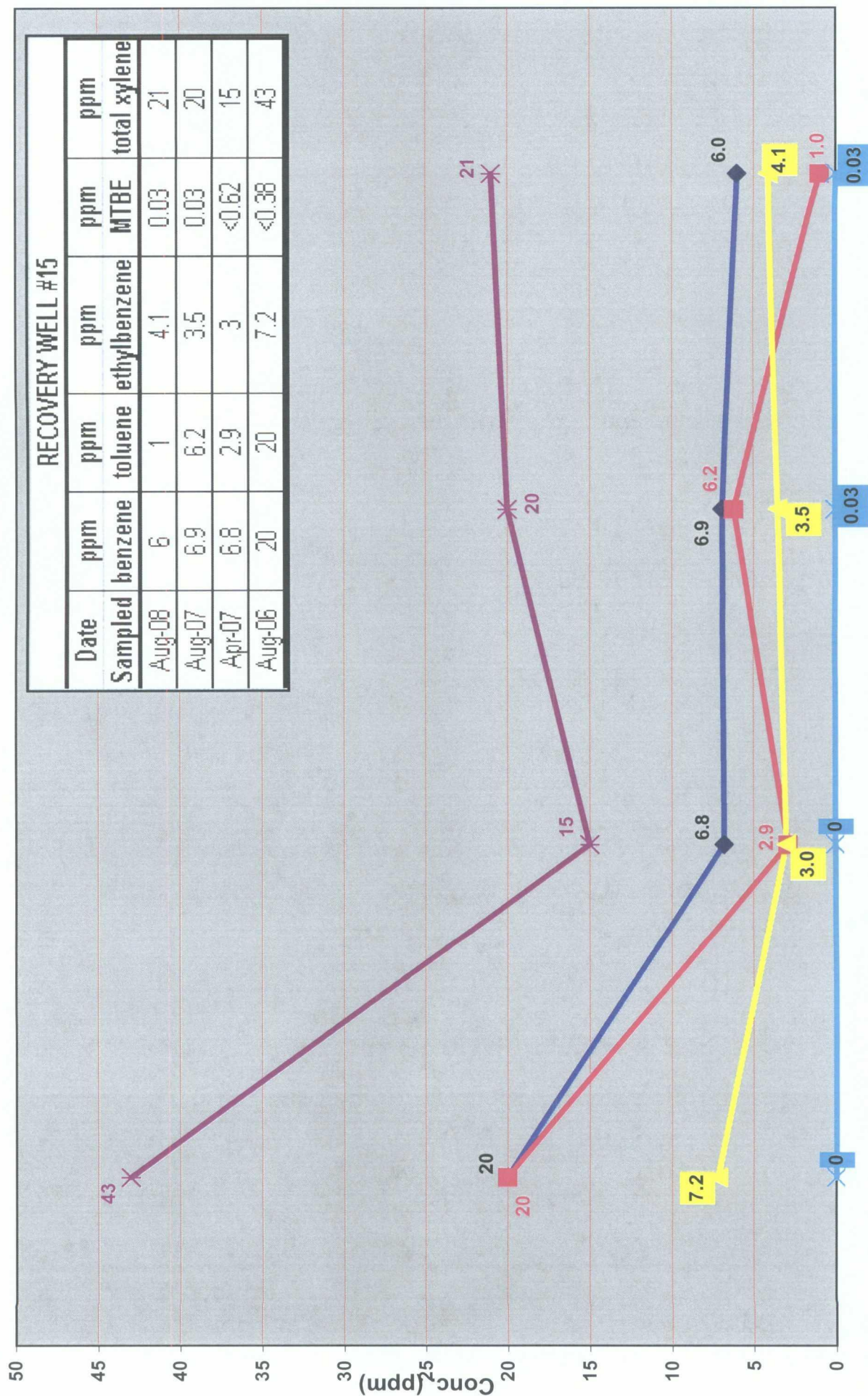


# Monitoring Well #8





# Recovery Well #15



AUG 08

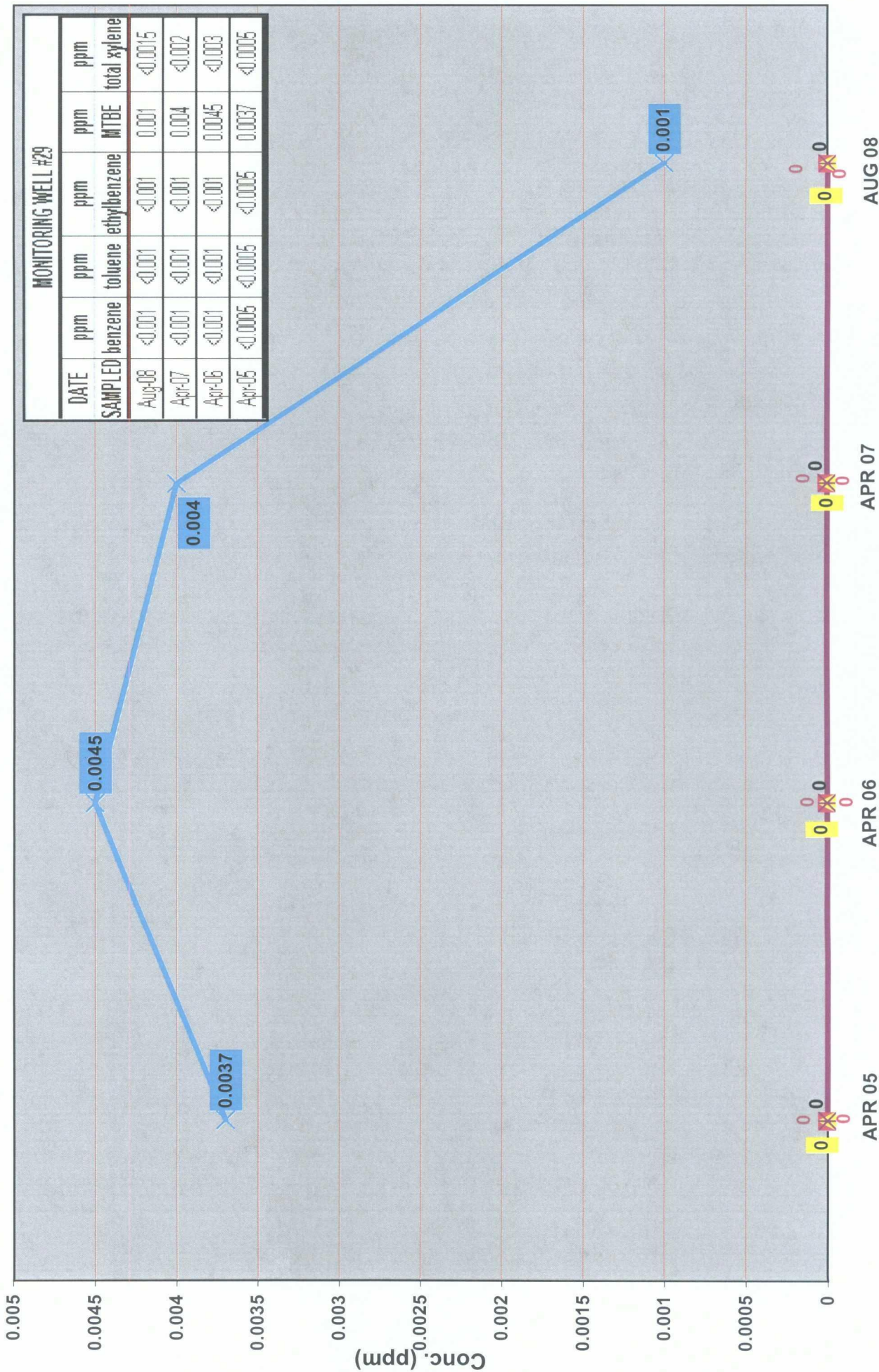
AUG 07

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AUG 06

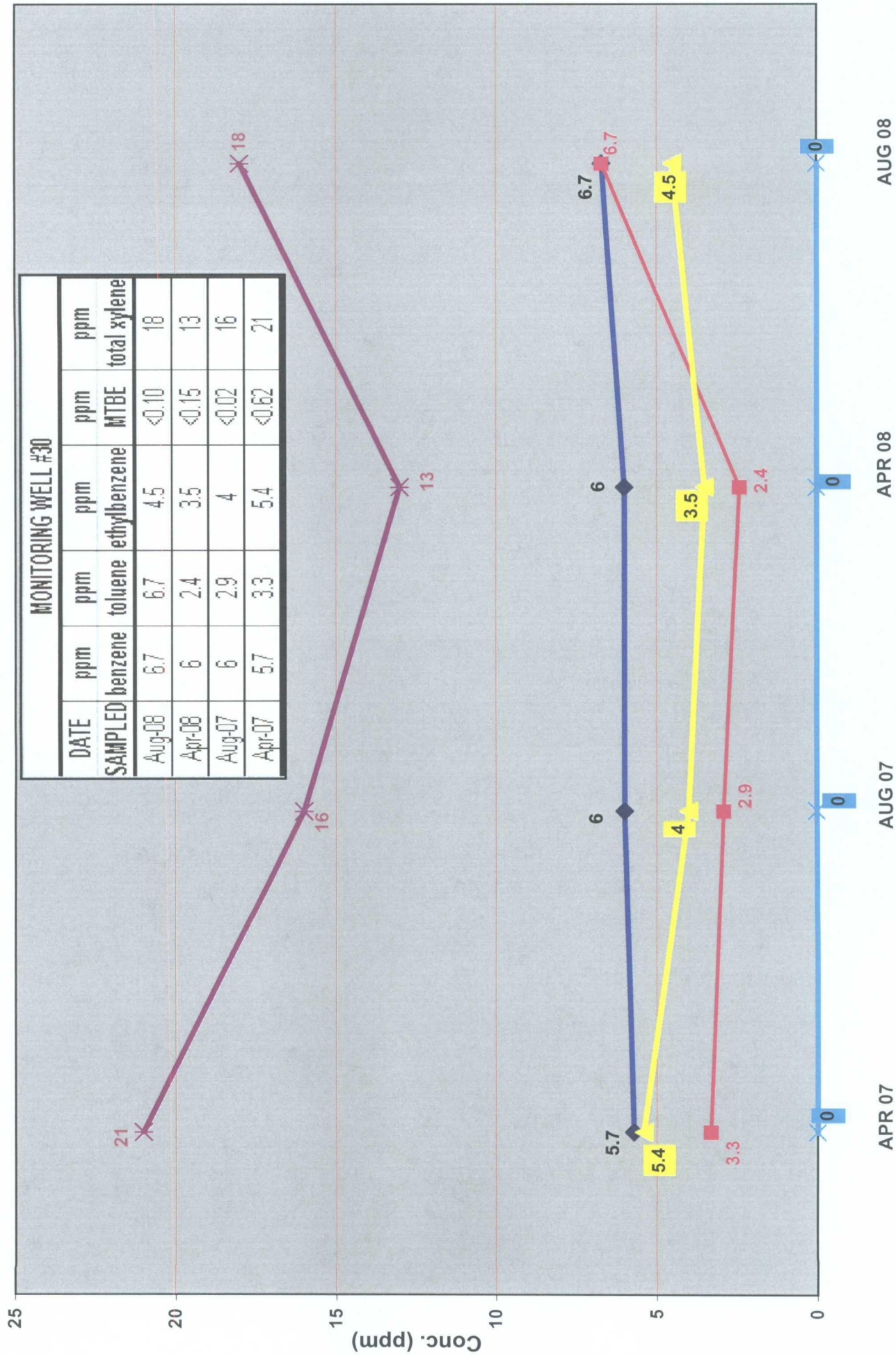


# Monitoring Well #29



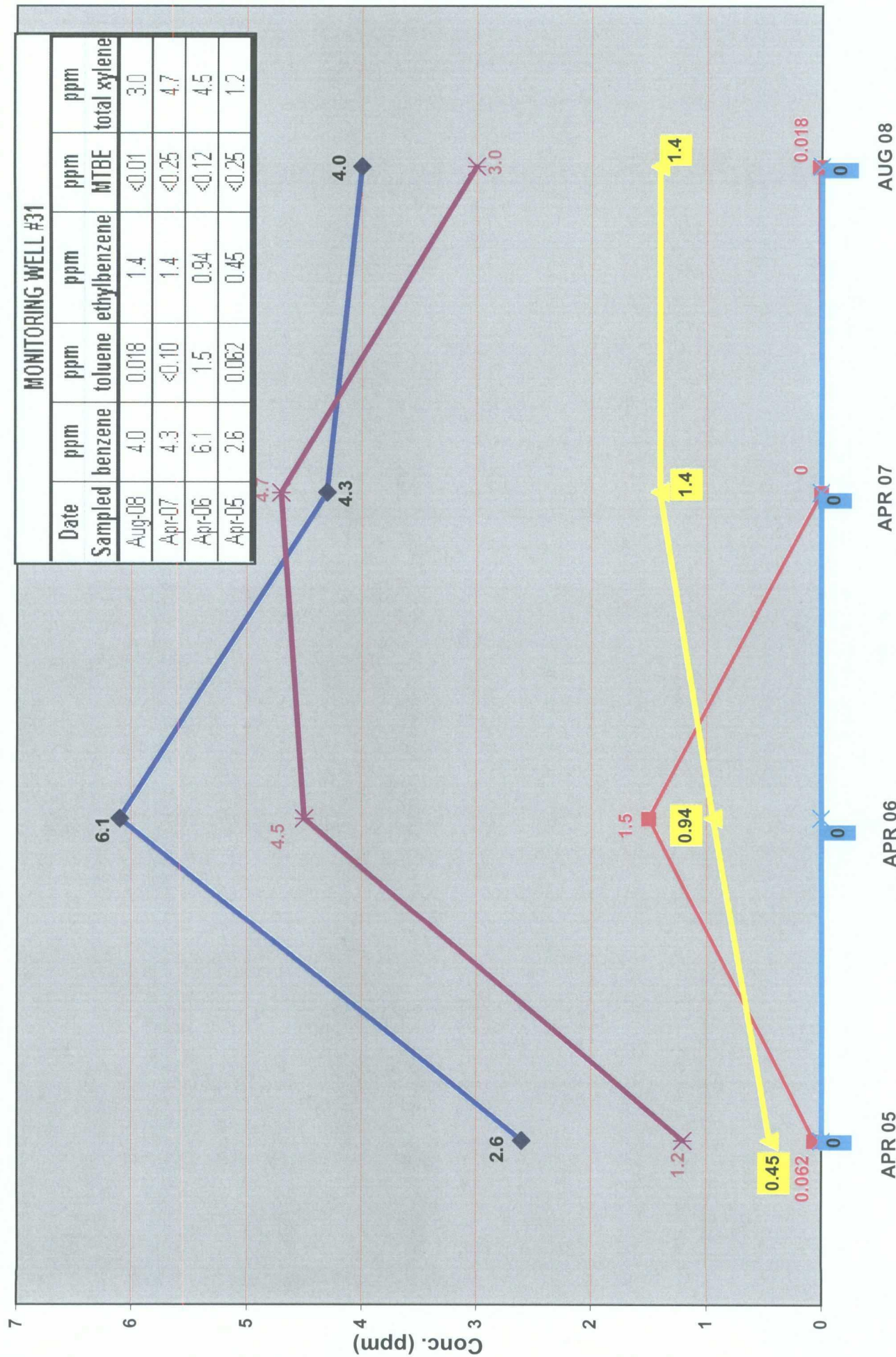


# Monitoring Well #30





# Monitoring Well #31



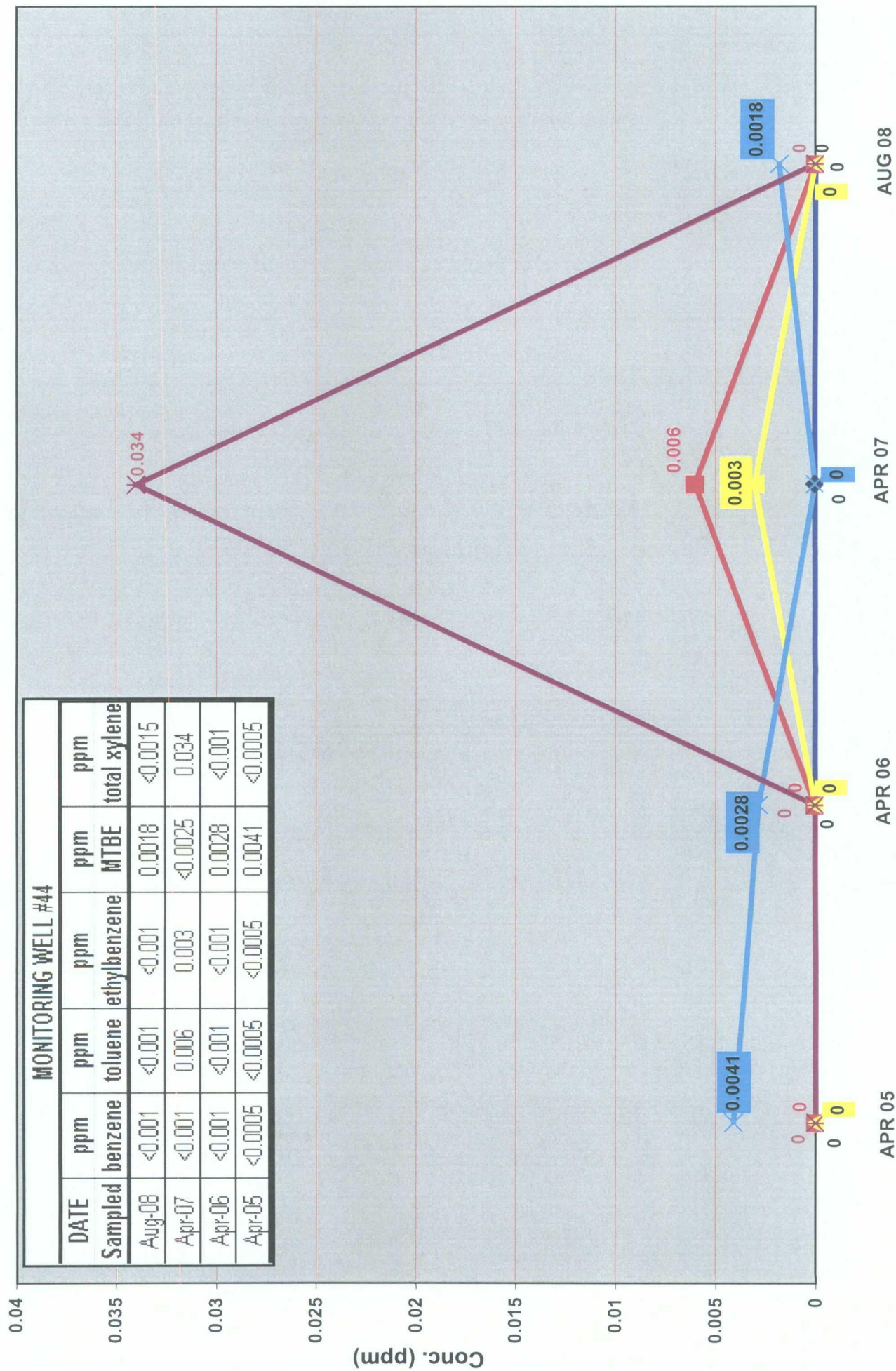
MONITORING WELL #31						
Date	Sampled	benzene	toluene	ethylbenzene	MTBE	total xylene
Aug-08		4.0	0.018	1.4	<0.01	3.0
Apr-07		4.3	<0.10	1.4	<0.25	4.7
Apr-06		6.1	1.5	0.94	<0.12	4.5
Apr-05		2.6	0.062	0.45	<0.25	1.2



# Monitoring Well #44

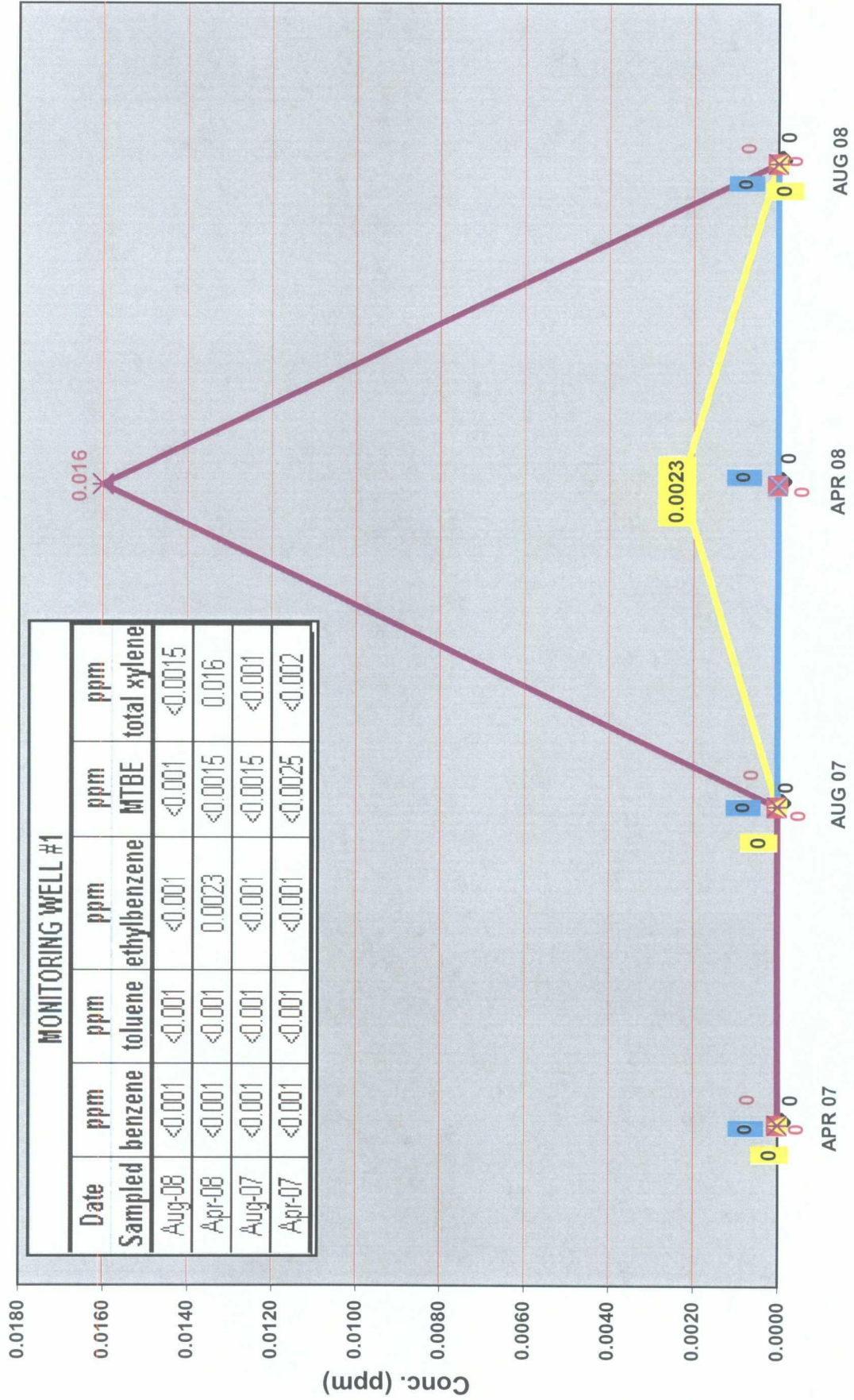


MONITORING WELL #44						
DATE	ppm	ppm	ppm	ppm	ppm	ppm
Sampled	benzene	toluene	ethylbenzene	MTBE	total xylene	
Aug-08	<0.001	<0.001	<0.001	0.0018	<0.0015	
Apr-07	<0.001	0.006	0.003	<0.0025	0.034	
Apr-06	<0.001	<0.001	<0.001	0.0028	<0.001	
Apr-05	<0.0005	<0.0005	<0.0005	0.0041	<0.0005	



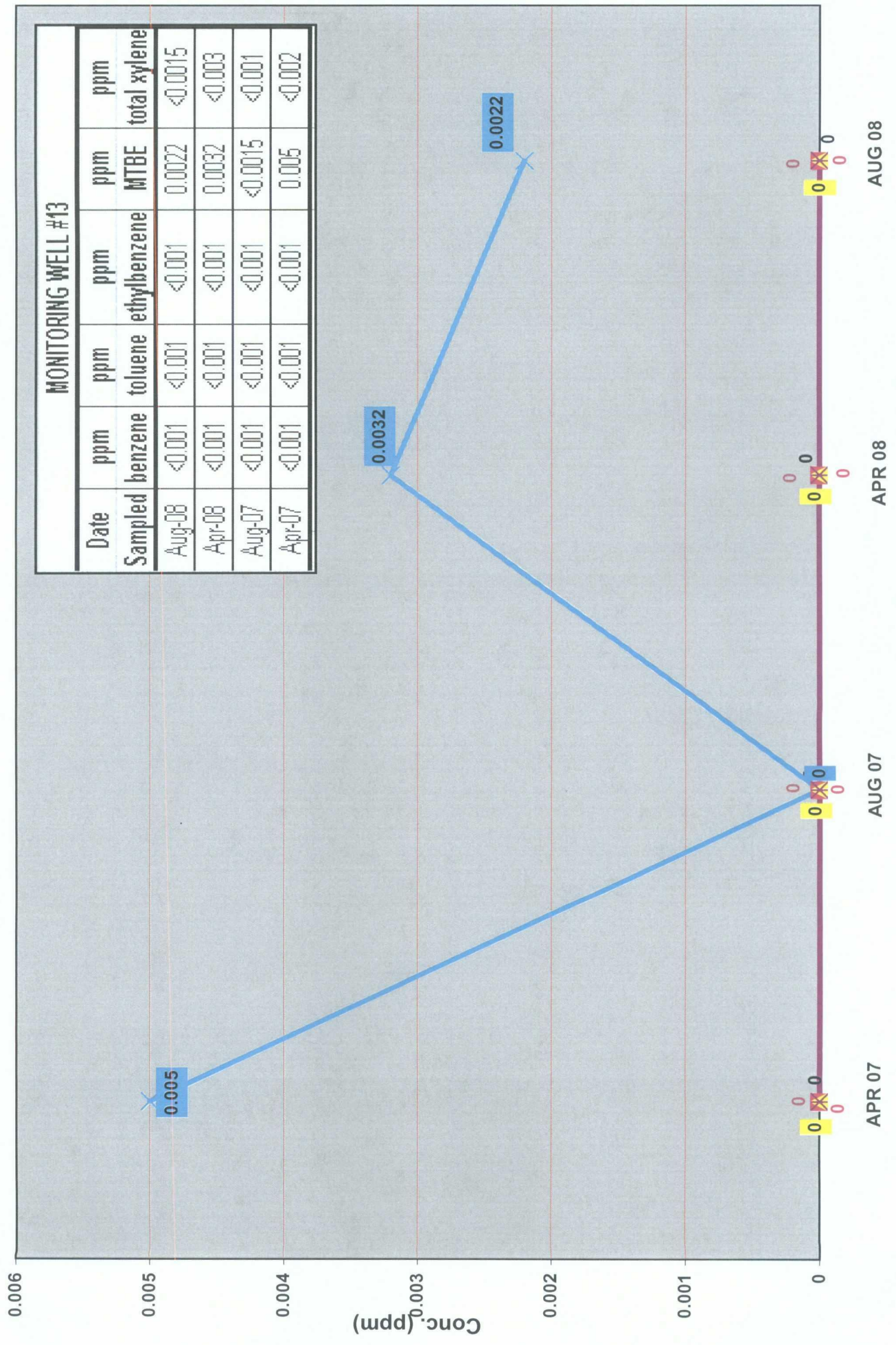


# Monitoring Well #1



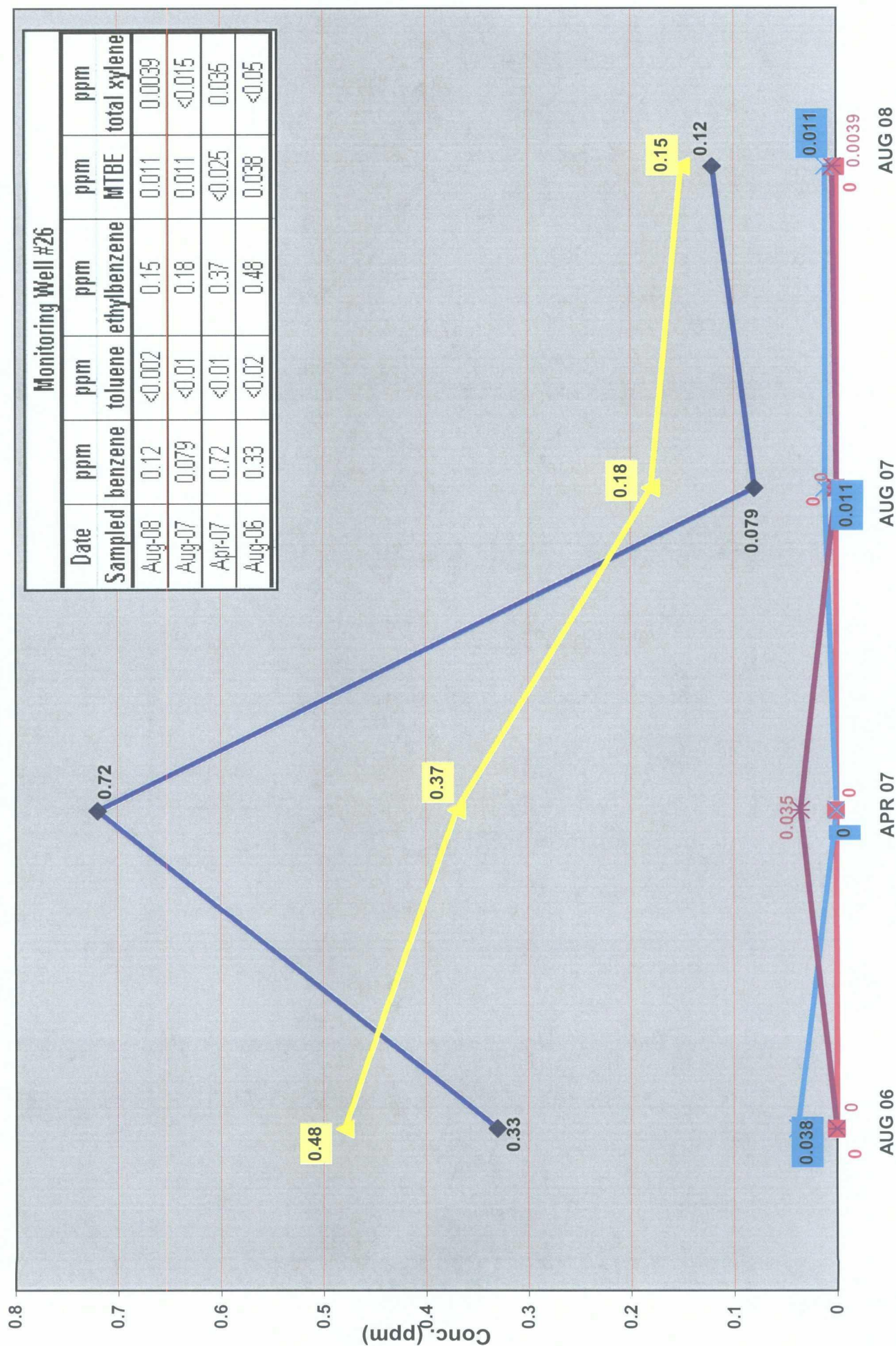


# Monitoring Well #13



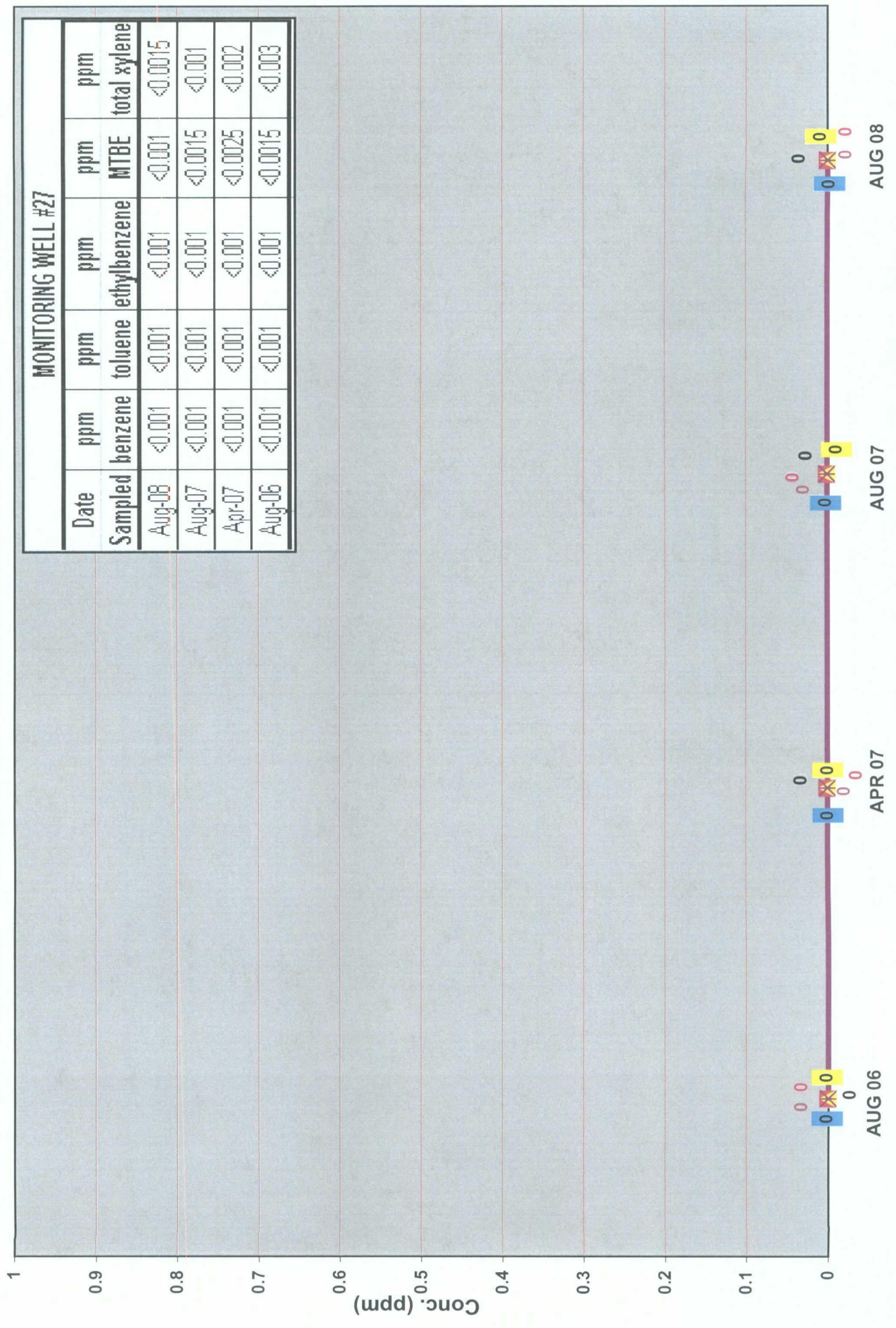


# Monitoring Well #26





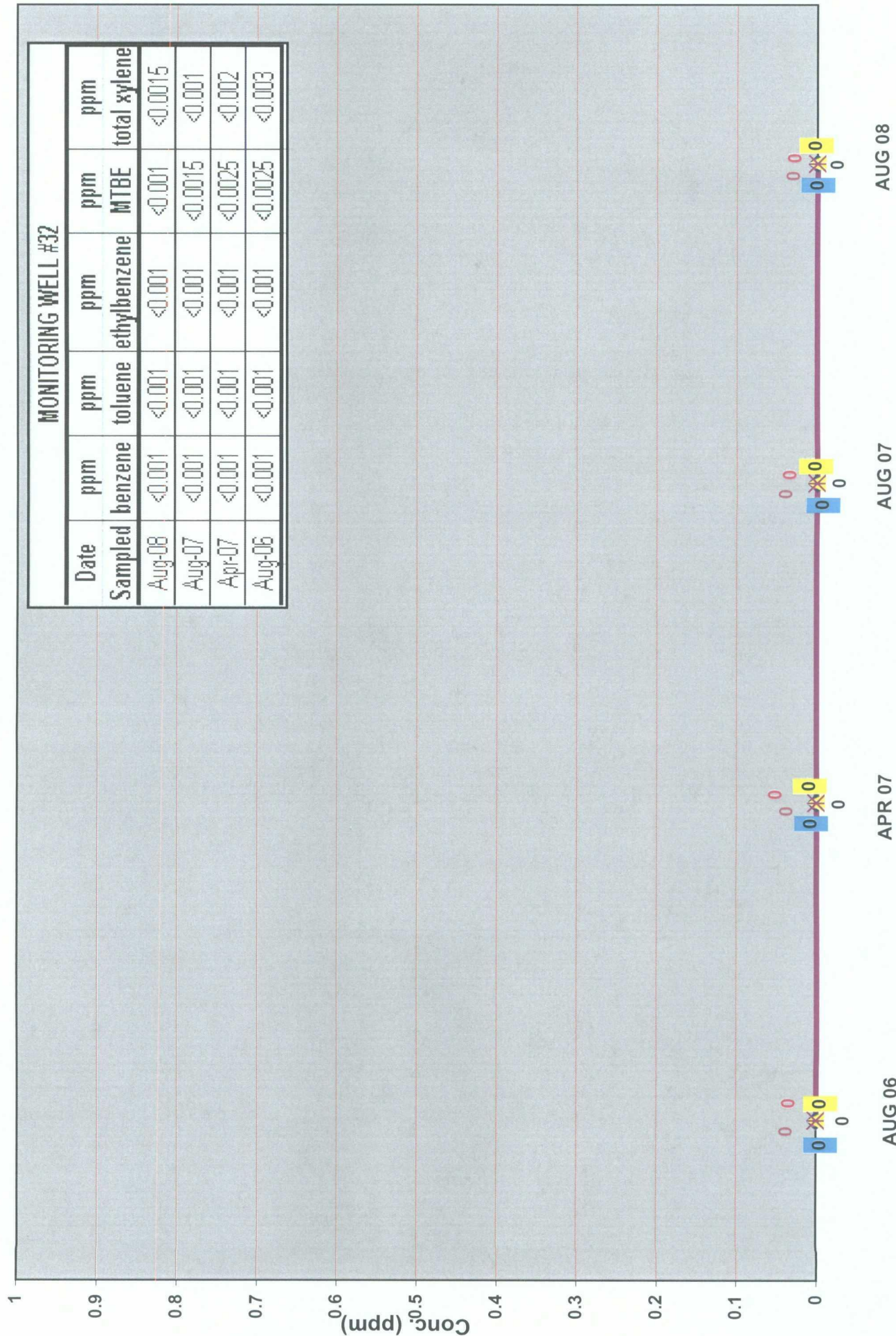
# Monitoring Well #27



MONITORING WELL #27					
Date	benzene	toluene	ethylbenzene	MTBE	total xylene
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001
Apr-07	<0.001	<0.001	<0.001	<0.0025	<0.002
Aug-06	<0.001	<0.001	<0.001	<0.0015	<0.003



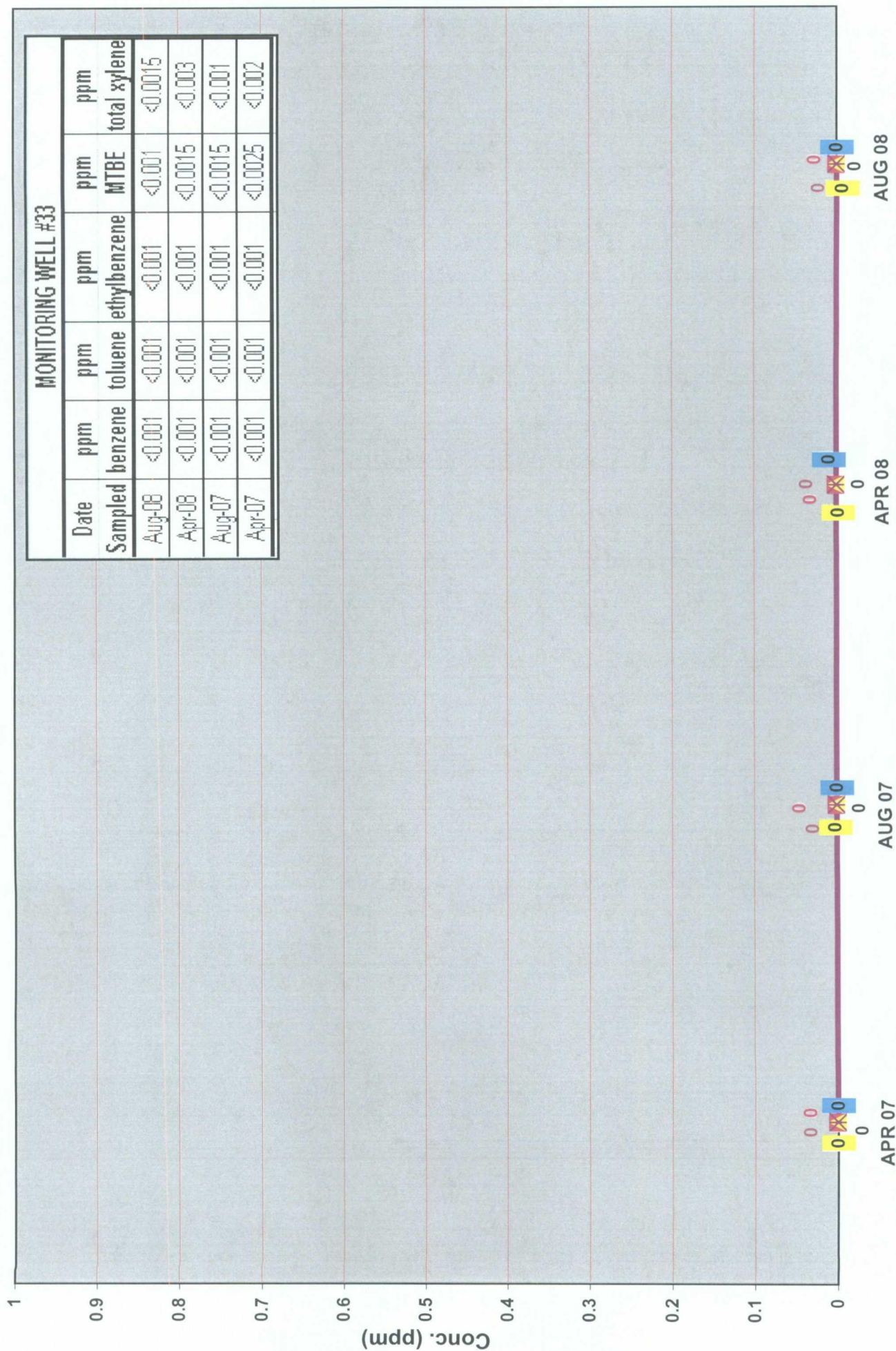
# Monitoring Well #32



MONITORING WELL #32						
Date	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene	
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015	
Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	
Apr-07	<0.001	<0.001	<0.001	<0.0025	<0.002	
Aug-06	<0.001	<0.001	<0.001	<0.0025	<0.003	



# Monitoring Well #33

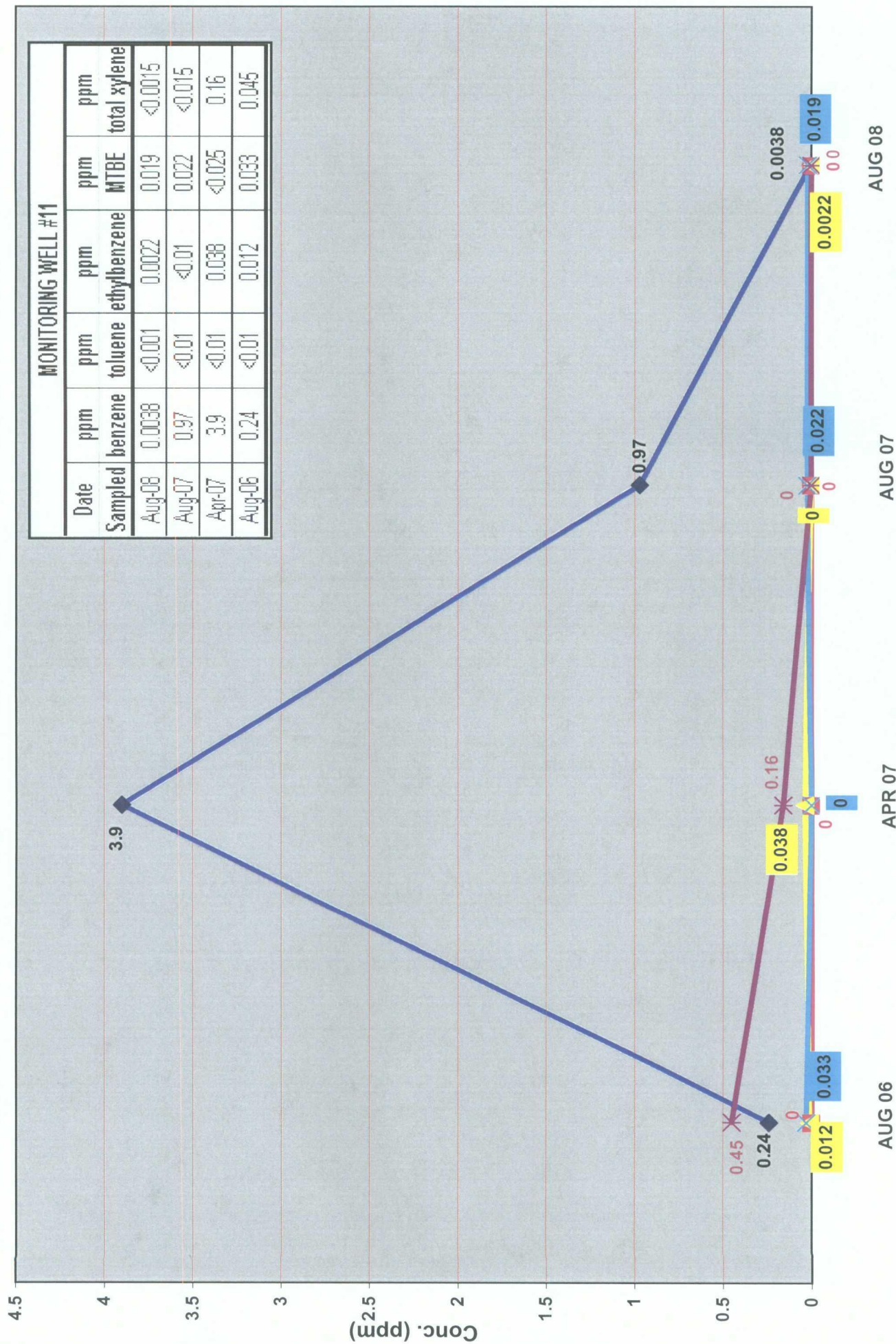


MONITORING WELL #33

Date	benzene	toluene	ethylbenzene	MTBE	total xylene
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Apr-08	<0.001	<0.001	<0.001	<0.0015	<0.003
Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001
Apr-07	<0.001	<0.001	<0.001	<0.0025	<0.002



# Monitoring Well #11



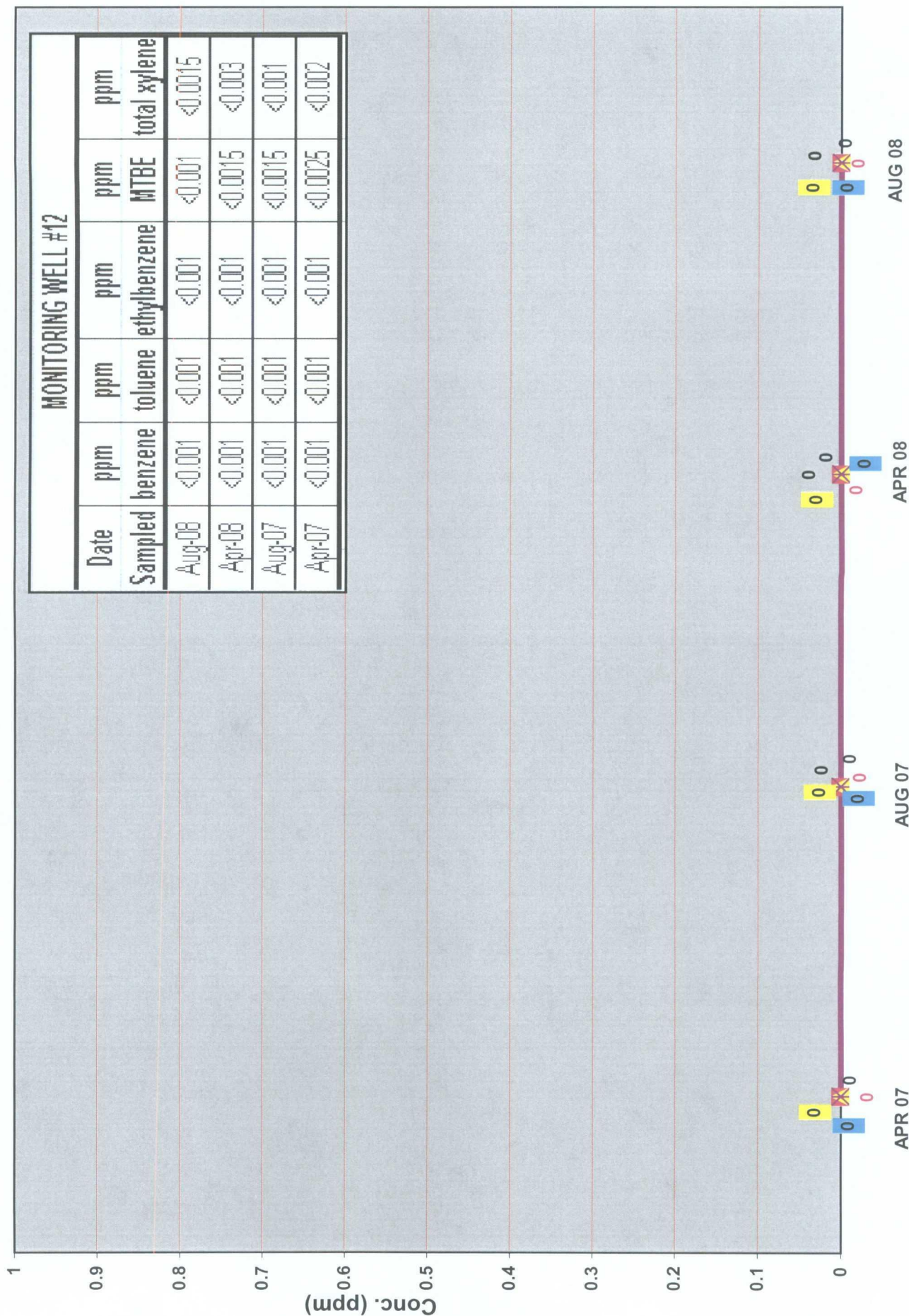
MONITORING WELL #11					
Date	ppm	ppm	ppm	ppm	ppm
Sampled	benzene	toluene	ethylbenzene	MTBE	total xylene
Aug-08	0.0038	<0.001	0.0022	0.019	<0.0015
Aug-07	0.97	<0.01	<0.01	0.022	<0.015
Apr-07	3.9	<0.01	0.038	<0.025	0.16
Aug-06	0.24	<0.01	0.012	0.033	0.045



# Monitoring Well #12

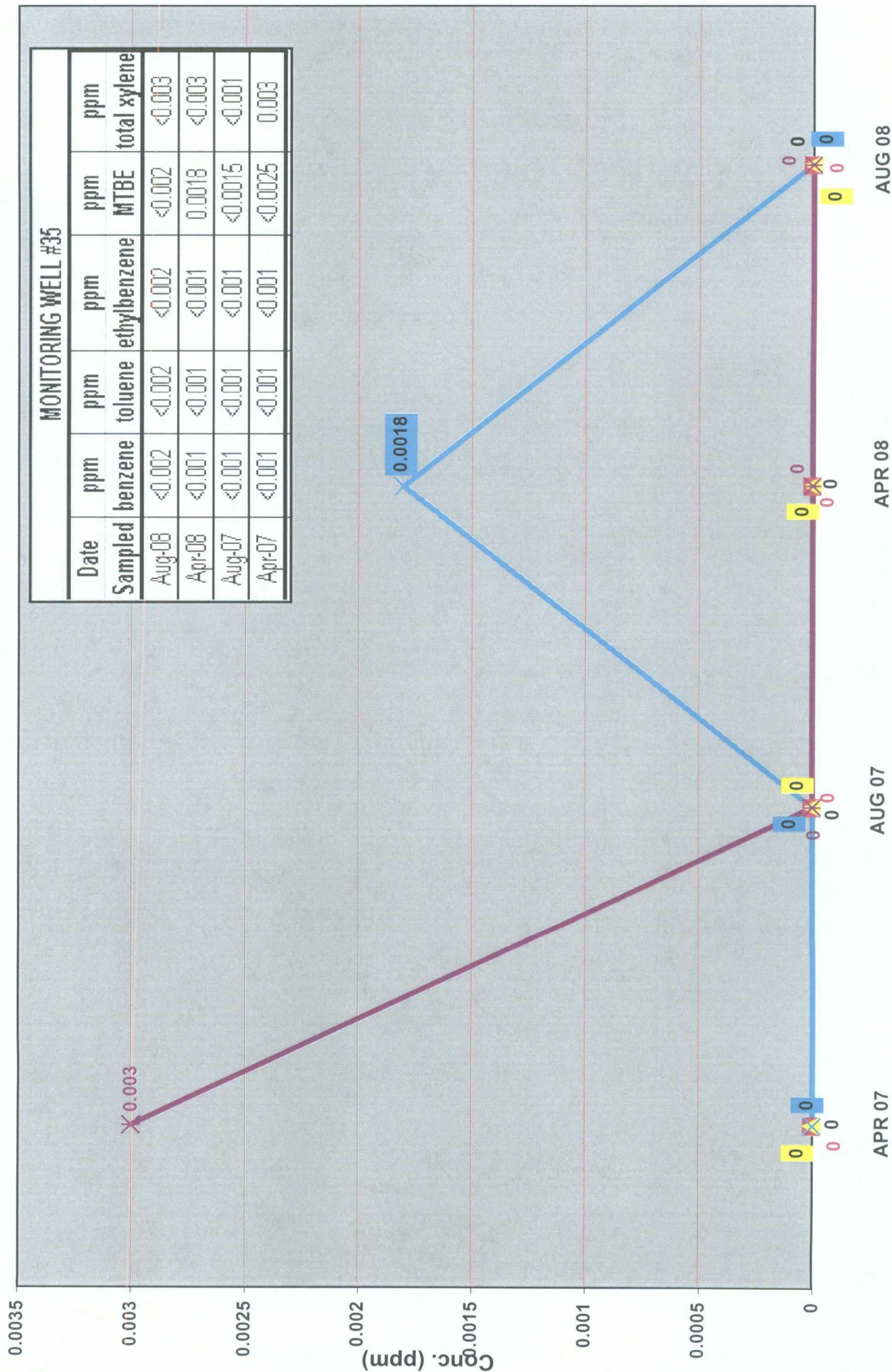
Legend:

- Benzene
- Toluene
- Ethylbenzene
- MTBE
- Total Xylene



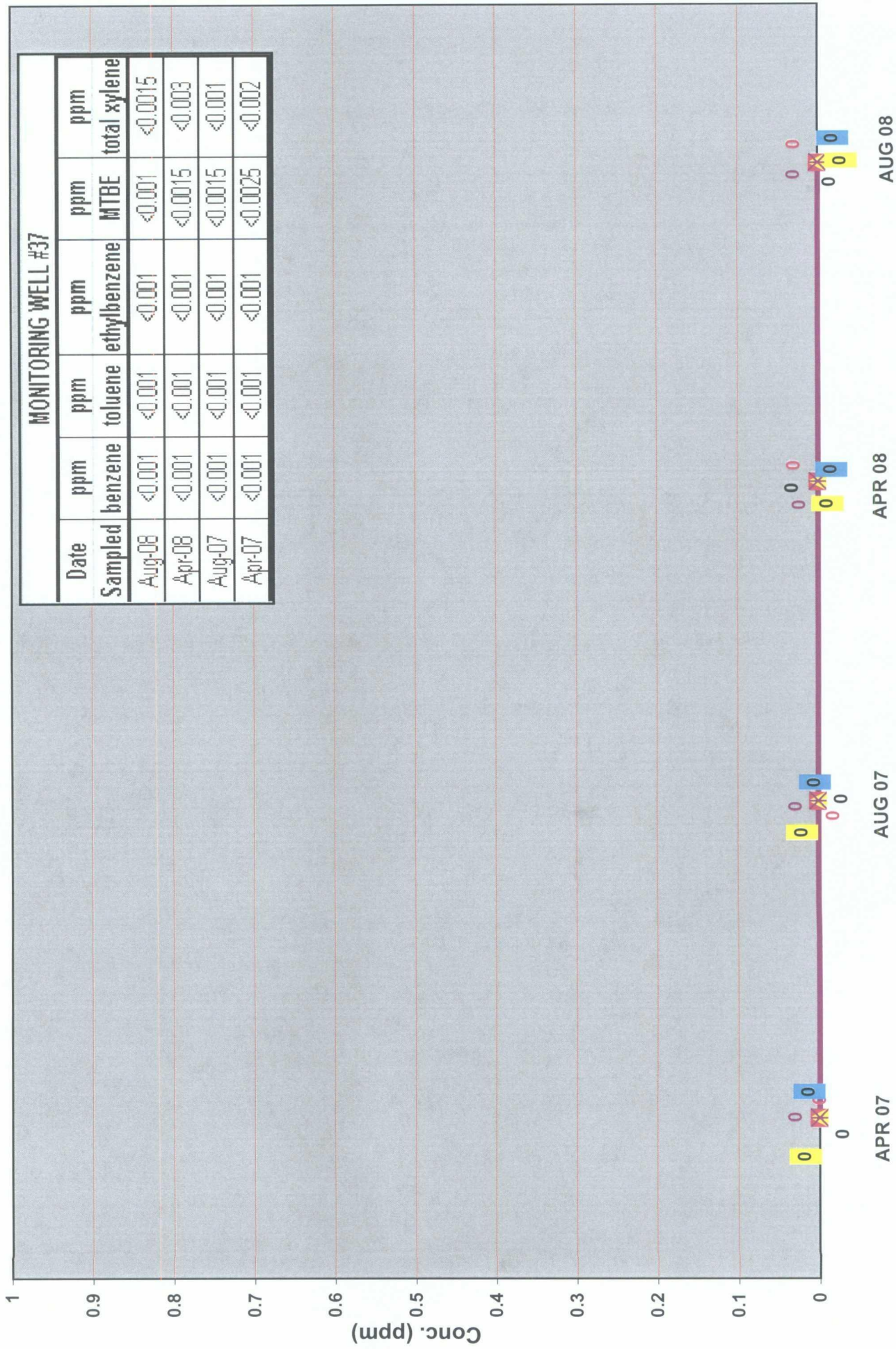


# Monitoring Well #35





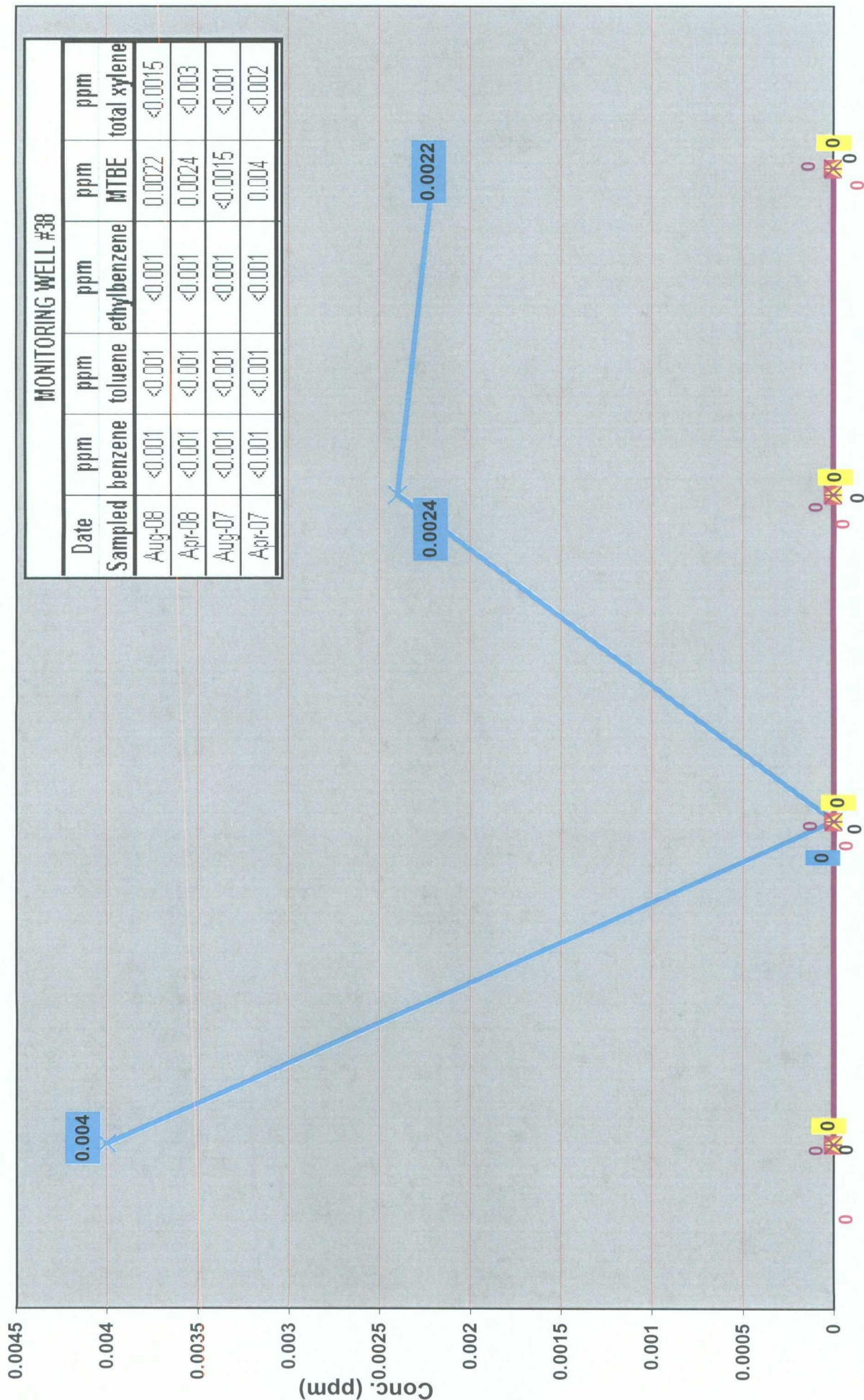
# Monitoring Well #37



MONITORING WELL #37						
Date	benzene	toluene	ethylbenzene	MTBE	total xylene	
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015	
Apr-08	<0.001	<0.001	<0.001	<0.0015	<0.003	
Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	
Apr-07	<0.001	<0.001	<0.001	<0.0025	<0.002	



# Monitoring Well #38



APR 07

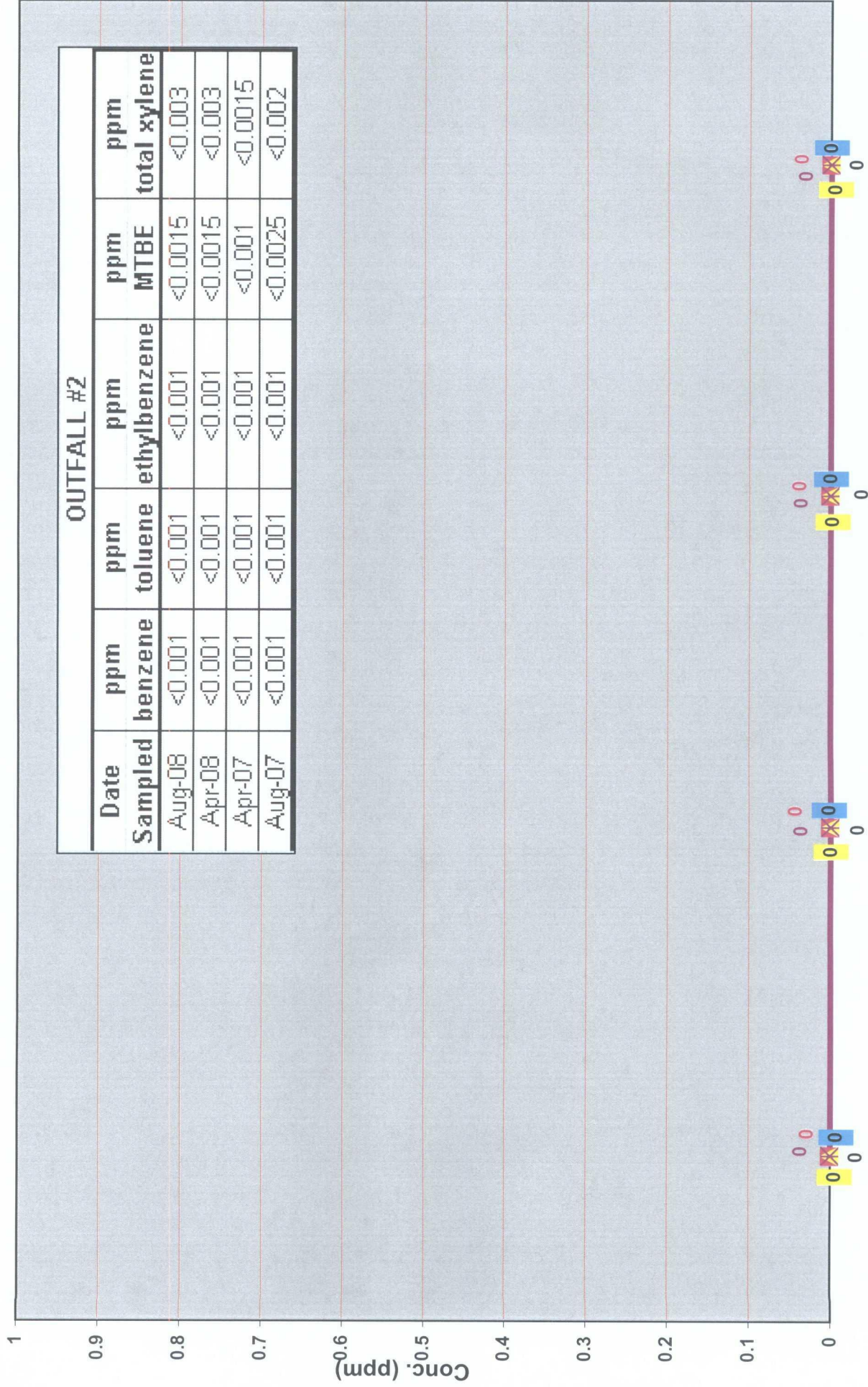
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APR 08

AUG 08



# OUTFALL #2

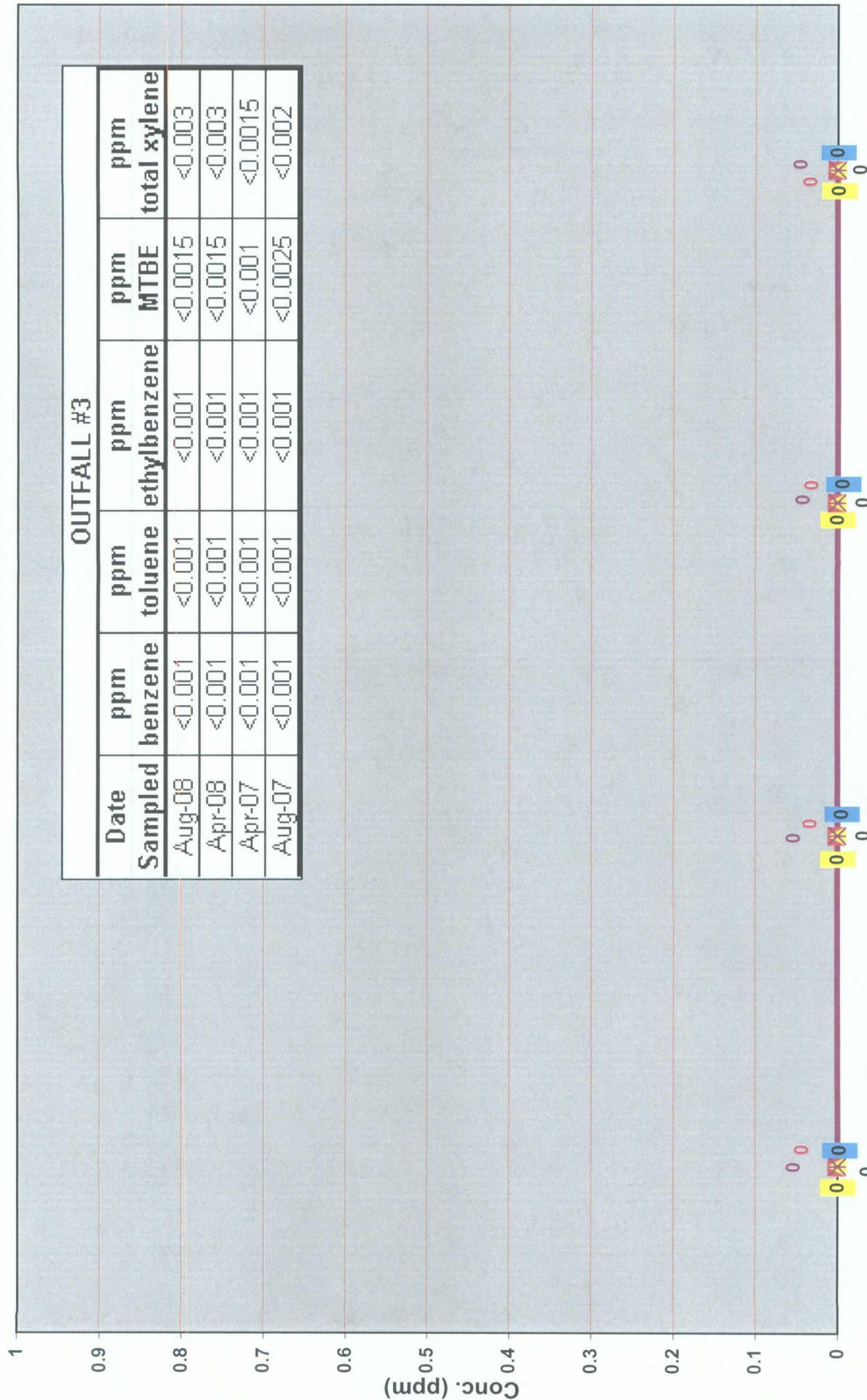


OUTFALL #2						
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene	
Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.003	
Apr-08	<0.001	<0.001	<0.001	<0.0015	<0.003	
Apr-07	<0.001	<0.001	<0.001	<0.001	<0.0015	
Aug-07	<0.001	<0.001	<0.001	<0.0025	<0.002	

APR 07      AUG 07      APR 08      AUG 08



# OUTFALL #3



OUTFALL #3						
Date	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene	
Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.003	
Apr-08	<0.001	<0.001	<0.001	<0.0015	<0.003	
Apr-07	<0.001	<0.001	<0.001	<0.001	<0.0015	
Aug-07	<0.001	<0.001	<0.001	<0.0025	<0.002	

APRIL 07

AUG 07

APR 08

AUG 08

## Section 12.0 Field Methods

## Field Methods

### Groundwater Elevation

All facility monitoring wells, recovery wells, observation and collection wells were measured for groundwater elevation in February and April. Recovery well pumps were shut off and the extraction of fluids ceased. Measurements of water and product levels were taken 48 hours after the cessation of fluid extraction.

In August, refinery personnel followed the guidelines of the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)* to collect groundwater levels and SPH thickness measurements. Prior to annual groundwater sampling activities, water elevation measurements were collected in all wells while the recovery wells were in operation and again after the pumps were removed and water levels had stabilized (5 days later). October groundwater level measurement procedures followed the protocol from the February and April program. Measured depth to groundwater information is in Section 9.0, Tabs 1.0, 2.0, and 3.0.

All water/product levels are determined to an accuracy of 0.01 foot using a Geotech Interface Meter. The technician records separate phase hydrocarbon, depth to water, and total well depth using this probe.

### Water Quality/Groundwater Sampling

Water quality parameters are measured using an Ultrameter 6P by the Myron L Company. Electrical conductance, oxidation-reduction potential (ORP), pH, and temperature are monitored during purging.

### Well Purging Technique

At least three well volumes are purged from the well. Purge volumes are determined using the following equation:

Well Depth – Casing Height – Depth to Liquid X Conversion Factor X Three.

The conversion factor is determined by the diameter of the well casing.

Casing	Conversion Factor
6"	1.50 gal/ft
5"	1.02 gal/ft
4"	0.74 gal/ft
3"	0.367 gal/ft
2"	0.163 gal/ft

Typically disposable bailers are used for purging and sampling. Each bailer holds one liter of liquid. Three well volumes can be calculated by counting the number of times a well is bailed.



On occasion, the submersible pump is used for purging wells that have a large volume of water. All purged water is poured/pumped into a 55-gallon drum designated for sampling events.

### **Well Sampling and Sample Handling Procedure**

Equipment and supplies needed for collecting representative groundwater samples include:

- Interface Meter
- Ultrameter 6P
- Distilled Water
- Disposable Latex Gloves
- Disposable Bailers
- Submersible pump and Generator (if needed)
- String/Twine
- Cooler with Ice
- Bottle kits with Preservatives (provided by the contract laboratory)
- Disposable 0.45 micron Field Filters and Syringes
- Glass Jar (usually 4 oz.)
- Sharpie Permanent Marker
- Field Paperwork/Logsheet
- Two 5-gallon buckets
- Trash container (plastic garbage bag)
- Ziploc Bags
- Paper towels

After sufficient purging, samples are collected with the bailer and poured into the appropriate sample containers. Two people are usually utilized for sampling. Sampling takes place over a bucket to insure that spills are contained

For dissolved metals, sample water is poured into a jar and then extracted with a syringe. The syringe is then used to push water through a field filter into the proper sample bottle to collect the dissolved metals sample. Volatile organic analysis samples are collected as to allow no head space in the container.

Samples are labeled immediately with location, date, time, analysis, preservative, and sampler. Then they are put in a Ziploc bag and placed in a cooler holding sufficient ice to keep them cool. The field logsheet is reviewed to verify all entries.

### **Purge and Decontamination Water Disposal**

The Ultrameter 6P and the interface probe are rinsed with distilled water after every well. The rinse procedure takes place over a bucket to insure that spills are contained.

All rinse and purge water is contained and then disposed of through the refinery wastewater system.

The submersible pump is decontaminated by placing it in a 55-gallon barrel filled with plant water and some Alconox. The pump is activated and will pump down the barrel twice. External areas are washed down and rinsed, also. All wash and rinse water is on containment and runs to the refinery wastewater system. Any glassware used is taken to the refinery laboratory and washed with Alconox and water and rinsed with reverse osmosis water. Laboratory wastewater runs through the refinery system.

### **Instrument Calibration**

The Ultrameter 6P instrument calibration occurs at the beginning of each day of sampling. For Conductivity and TDS calibration, the cell is rinsed three times with a 3000 umhos/cm NaCl Standard. The cell cup is refilled with the standard. Either the **COND** or the **TDS** button is pressed and then the **CAL** button is pushed. Press the up or down arrow until the display agrees with the standard. The **CAL** button is pressed to accept the value.

The Ultrameter 6P has an electronic ORP calibration which is automatically calibrated with the 7 pH. The pH sensor well is rinsed three times with 7.0 buffer solution and then refilled again with that buffer. The **pH** button is pressed then the **CAL** button. The up or down arrow is adjusted until the display agrees with the buffer value. The **CAL** button is pushed to accept that value. Repeat the calibration steps using an acid buffer solution and then again with a base buffer solution.

### **Remediation System Measurement**

Recovery well flows are measured using a 1000 ml graduated cylinder. The sample port on the discharge line of the pump is opened and effluent flows into the graduated cylinder. During a pump cycle, a measurement is taken over time and then calculated to a gallon per day rate.

Recovery rates at Tk #37 (Hammond Ditch French Drain) and Tk #38 (#1 East Outfall) are determined through flow meters installed in those systems. Refinery personnel record the rates periodically.

## Section 13.0 Waste Disposition

# Waste 2008

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
2/26/2008	CH296877	001749505 FLE 9a.1	API Sludge (Hazardous Waste Solid) K-051, D-008	3	DM	1660 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
2/26/2008	CH247415	001749505 FLE 9a.2	Main Column Bottoms Sludge K-170, D008, D009	1	DM	650 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
2/26/2008	CH296865	001749505 FLE 9a.3	Process Sewer Spill Clean-up Hazardous Waste Solid D-018, F-037	1	DM	400 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
2/26/2008	CH255646	001749505 FLE 9a.4	Soil/Red Dye (Terminals Cleanup)	1	DM	800 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
2/26/2008	CH296795	001749505 FLE 27a.5	Out-Dated Triple F (Fire Fighting Foam) Non-RCRA Hazardous Waste Liquid	8 Total - 5 Drums, 3- 5 gal	DF	2,120	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
2/26/2008	CH296828	001749505 FLE 27a.6	C-801 Compressor Dock Sludge Non RCRA Hazardous Waste Solids	4	DM	2200 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
3/5/2008		004162516 JJK	Unifiner Spent Catalyst D001, K-171	4	CM (flo-bins)	13,340 P	Catalyst Recovery of Louisiana, LLC 100 American BLVD Lafayette, LA 70508	Recycled	Yes
6/3/2008	CH309573B	002049607 FLE	Soil Contaminated with Sewer Box Overflow D018, F-037	1	DT	28,320	Clean Harbors - Aragonite, UT 11600 North Aptus Rd Grantsville, Utah 84029	Incineration	Yes
6/24/2008	CH315168	002064458 FLE 9a.1	Burner Rack Sludge (Non-Hazardous)	6	DM	3000 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfill	Yes
6/24/2008	CH312284	002064456 FLE 9a.1	Sand with Hydrocarbons from the Fire Training Grounds (Non- Hazardous)	1	DM	450 P	Clean Harbors Deer Park LP 2027 Battleground Road La Porte, TX 77571	Incineration	Yes



# Waste 2008

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
6/24/2008	CH312284	002064456 FLE 9a.2	Sand with Hydrocarbons from the Fire Training Grounds (Non-Hazardous)	8	CF	14,400 P	Clean Harbors Deer Park LP 2027 Battleground Road La Porte, TX 77571	Incineration	Yes
6/24/2008	CH308191	002064456 FLE 9a.3	Shattershield Halide Bulbs (Universal Waste)	2	CF	40 P	Clean Harbors Deer Park LP 2027 Battleground Road La Porte, TX 77571	Recycle (Earth Protection Services, Inc) 8-29-08	Yes
6/24/2008	CH296865	002064457 FLE 9a.1	Process Sewer Sludge from spill clean-up (D018, F037)	1	CF	1,800 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
6/24/2008	CH296877	002064457 FLE 9a.2	Soil contaminated with API Separator Sludge (D018, K-057)	1	CF	1,800 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
6/24/2008	CH315430	002064457 FLE 9a.3	Vacuum Truck Sludge (F037)	19	DM	9,500 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
6/24/2008	CH308190	002064457 FLE 9a.4	Fluorescent Light Bulbs (Universal Waste)	1	CF	15 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Recycle (USA Lamp & Ballast Recycling, Inc) 7 22-08	Yes
10/8/2008	CH331097	001777972 FLE 9a.1	Mercury Switches (D-009)	1	DM (5-gal.)	10 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Metals Recovery	Yes
10/8/2008	CH329190	001777972 FLE 9a.2	Crushed Bulbs for Retort (D-009)	1	DM (5-gal.)	10 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Metals Recovery	Yes
10/8/2008	CH329171	001777973 FLE (9a.1)	Transformer Oil (non PCB) and Soil from Spill Clean Up (Non-Hazardous)	2	DM	800 P	Clean Harbors Arizona, LLC 1340 West Lincoln Street Phoenix, Arizona 85007	Landfill	Yes
10/8/2008	CH329472	001777973 FLE (9a.2)	Waste Oil and Soil from Spill Clean Up (Non-Hazardous)	1	DM	400 P	Clean Harbors Arizona, LLC 1340 West Lincoln Street Phoenix, Arizona 85007	Landfill	Yes

# Waste 2008

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
10/8/2008	CH331091	001777973 FLE (9a.3)	Crude Oil and Soil from Spill Clean Up (Non-Hazardous)	1	DM	400 P	Clean Harbors Arizona, LLC 1340 West Lincoln Street Phoenix, Arizona 85007	Landfill	Yes
10/8/2008	CH106148	001777971 FLE (9a.1)	Exchanger Bundle Sludge (K-050)	5	DM	2000 P	Clean Harbors Deer Park LP 2027 Battleground Road La Porte, TX 77571	Incineration	Yes
10/8/2008	CH247415	001777971 FLE (9a.2)	Main Column Bottoms Sludge K-170, D008, D009	4	DM	1600 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
10/8/2008	CH272262	001777971 FLE (9a.3)	Computer Waste for Recycle (Non -Hazardous)	2	pallets (CW)	600 P	Clean Harbors Deer Park LP 2027 Battleground Road La Porte, TX 77571	Recycle	Yes

# Spent Caustic Waste 2008

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
1/8/2008	CH248999B	001066259 FLE	Waste Caustic Alkali Liquids D002	1	TT	4000 gal (30,820 P)	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
1/8/2008	CH248999B	001066258 FLE	Waste Caustic Alkali Liquids D002	1	TT	27520 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
1/15/2008	CH248999B	001066260 FLE	Waste Caustic Alkali Liquids D002	1	TT	29,300 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
2/26/2008	CH248999B	000557024 FLE	Waste Caustic Alkali Liquids D002	1	TT	37,560 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
2/28/2008	CH248999B	000557023 FLE	Waste Caustic Alkali Liquids D002	1	TT	31,960 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
4/1/2008	CH248999B	000557174 FLE	Waste Caustic Alkali Liquids D002	1	TT	32,780 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
4/11/2008	CH248999B	000557237 FLE	Waste Caustic Alkali Liquids D002	1	TT	42,700	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
4/17/2008	CH248999B	000557283 FLE	Waste Caustic Alkali Liquids D002	1	TT	38,560	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
4/29/2008	CH248999B	000557385 FLE	Waste Caustic Alkali Liquids D002	1	TT	40,240	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes

# Spent Caustic Waste 2008

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
5/15/2008	CH248999B	000557447 FLE	Waste Caustic Alkali Liquids D002	1	TT	38,780	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
5/22/2008	CH248999B	000557448 FLE	Waste Caustic Alkali Liquids D002	1	TT	35,980	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
5/29/2008	CH248999B	000557449 FLE	Waste Caustic Alkali Liquids D002	1	TT	34,160	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
6/5/2008	CH248999B	002087228 FLE	Waste Caustic Alkali Liquids D002	1	TT	39,900	Deer Trail, CO Facility 108555 East Highway 36 Deer Trail, CO 80105	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
6/12/2008	CH248999B	001849359 FLE	Waste Caustic Alkali Liquids D002	1	TT	39,780	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
6/20/2008	CH248999B	001849360 FLE	Waste Caustic Alkali Liquids D002	1	TT	39,260	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
6/26/2008	CH248999B	001849361 FLE	Waste Caustic Alkali Liquids D002	1	TT	39,960	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
7/1/2008	CH248999B	001849443 FLE	Waste Caustic Alkali Liquids D002	1	TT	39,880	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
7/10/2008	CH248999B	001849486 FLE	Waste Caustic Alkali Liquids D002	1	TT	39,960	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes



# Spent Caustic Waste 2008

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
7/24/2008	CH248999B	002049885 FLE	Waste Caustic Alkali Liquids D002	1	TT	35,640	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
8/7/2008	CH248999B	001192332 FLE	Waste Caustic Alkali Liquids D002	1	TT	36,260	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
8/28/2008	CH248999B	002322559 FLE	Waste Caustic Alkali Liquids D002	1	TT	37,120	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
9/18/2008	CH248999B	002321314 FLE	Waste Caustic Alkali Liquids D002	1	TT	42,720	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
10/2/2008	CH248999B	002322025 FLE	Waste Caustic Alkali Liquids D002	1	TT	35,200	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
10/16/2008	CH248999B	002322026 FLE	Waste Caustic Alkali Liquids D002	1	TT	41,500	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
10/30/2008	CH248999B	002322027 FLE	Waste Caustic Alkali Liquids D002	1	TT	37,980	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
11/13/2008	CH248999B	002322109 FLE	Waste Caustic Alkali Liquids D002	1	TT	37,960	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
11/25/2008	CH248999B	002322110 FLE	Waste Caustic Alkali Liquids D002	1	TT	38,500	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes

## Spent Caustic Waste 2008

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
12/2/2008	CH248999B	002322243 FLE	Waste Caustic Alkali Liquids D002	1	TT	40,100	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes
12/11/2008	CH248999B	002322111 FLE	Waste Caustic Alkali Liquids D002	1	TT	25,920	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Neutralized & Solidified with Kiln Dust - Landfilled	Yes

## Section 14.0 Below Grade Testing

## LOOMFIELD REFINERY

## UNDERGROUND PROCESS AND WASTEWATER LINES - Inspection &amp; Repair Schedule

Line Number	Description (Service)	Line Size	Line Length	Starting Location	End Location	Drawing Reference	Construction Material	Inspection Scheduled	Inspection Date	Inspection Results Pass/Fail	Test/ Inspection Method	Repairs/ Maint Needed	Repairs- Maint Completion date
1	Effluent Wtr. Transfer Line	6	907 L/F	Effluent Pond Outlet Pump P-616	North Evaporation Pond	D-500-800-031	PVC	2012					
2	Effluent Wtr. Trans. Pump	6	908 L/F	North Evaporation Pond Outlet	Effluent Transfer Pump P-671	D-500-800-031	PVC	2012					
3	Effluent Wtr. Pump Disch.	6	909 L/F	Effluent Trans. Pump Disch.	Injection Well Building	D-500-800-031	PVC	2012					
4	Injection Well Recir. Line	6	910 L/F	Injection Well Building	North Evaporation Pond	D-500-800-031	PVC	2012					
5	River Terrace Transfer Line	2	911 L/F	River Terrace Processing Skid	River Pump Building Water Basin	D-500-800-043	PVC	2012					
6	Crude Transfer Line	12	912 L/F	Pipe Rack East Of LPG Stg Tks.	Pipe Rack Southwest of Tk. # 31	N/A	Carbon steel	2008	May-08	Pass	Praxair	None	N/A
7	Steam Header at Terminals	6	913 L/F	Pipe Rack Southeast of Tk. # 31	Pipe Rack East Of LPG Stg. Tks.	N/A	Carbon steel	2011					
8	Condensate Return Header	4	914 L/F	Pipe Rack East Of LPG Stg Tks.	Pipe Rack Southwest of Tk. # 31	N/A	Carbon steel	2011					
9	C-4 To Blend	4	915 L/F	Pipe Rack East Of LPG Stg Tks.	Pipe Rack Southwest of Tk. # 31	N/A	Carbon steel	2008	May-08	Pass	Praxair	None	N/A
10	Diesel Sales Line	12	916 L/F	Pipe Rack Southeast of Tk. # 31	Filter Pad Area North Of Loading Pad	N/A	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A
11	Lite Natural Line	12	917 L/F	Pipe Rack Southeast of Tk. # 31	Filter Pad Area North Of Loading Pad	N/A	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A
12	(DEAD) Out Of Service	12	918 L/F	Pipe Rack Southeast of Tk. # 31	Filter Pad Area North Of Loading Pad	N/A	Carbon steel	out of service					
13	Lite Straight Run Product	4	TBD	Pipe Rack Southeast of Tk. # 31	Rack Area North Of Tk. # 23	N/A	Carbon steel	2011					
14	Poly Material To Storage	3	382 L/F	Pipe Rack Southeast of Tk. # 31	Area Northeast Of Tk. # 21	N/A	Carbon steel	2011					
15	Poly Unit Feed Line	3	383 L/F	Area Northeast of Tk. # 21	Pipe Rack Southwest of Tk. # 31	N/A	Carbon steel	2011					
16	LPG Rerun Line	2	384 L/F	Area Northeast Of Tk. # 21	Pipe Rack Southwest of Tk. # 31	N/A	Carbon steel	2010					
17	Saturate To Storage	2	385 L/F	Pipe Rack Southeast of Tk. # 31	Area Northeast Of Tk. # 21	N/A	Carbon steel	2009					
18	C-4 To Storage	2	386 L/F	Pipe Rack Southeast of Tk. # 31	Area Northeast Of Tk. # 21	N/A	Carbon steel	2009					
19	C-3 To Storage	2	387 L/F	Pipe Rack Southeast of Tk. # 31	Area Northeast Of Tk. # 21	N/A	Carbon steel	2009					
20	JP-8 Sales Line	8	388 L/F	Pipe Rack Southeast of Tk. # 31	Out Of Service	N/A	Carbon steel	out of service					
21	#1 Diesel Sales From Tk.18	6	389 L/F	Pipe Rack Southeast of Tk. # 31	Filter Pad Area North Of Loading Pad	N/A	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A
22	Slop Line To Tk. # 22	4	390 L/F	Area Northeast Of Tk. # 21	Out of Service	N/A	Carbon steel	out of service					
23	Isomater/Naptha Line	6	699 L/F	Low Rack West Of Tk. # 25	Area West Of Bullet Tk. # 12	N/A	Carbon steel	2008	May-08	Pass	Praxair	None	N/A
24	Premium Sales	8	392 L/F	Pipe Rack West Of Tk. # 36	Filter Pad Area North Of Loading Pad	N/A	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A
25	Reformat from Tk.s # 3 & 4	6	393 L/F	Pipe Rack West Of Tk. # 36	Filter Pad Area North Of Loading Pad	N/A	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A
26	Naptha to VRU	4	313 L/F	Crude Line East Of B # 21	Manifold @ VRU Unit	N/A	Carbon steel	2008	May-08	Pass	Praxair	None	N/A
27	Naphta Feed To VRU Unit	4	223 L/F	Transfer Pump @ Tk. # 44	Manifold @ VRU Unit	N/A	Carbon steel	2008	May-08	Pass	Praxair	None	N/A
28	Naptha Fill/Rerun To Tk. #44	4	223 L/F	Manifold @ VRU Unit	Naptha Fill Line To Tk. # 44	N/A	Carbon steel	2008	May-08	Pass	Praxair	None	N/A
29	#1 Diesel To Bays #1 & 2	8	397 L/F	From F-706 Filter Piping	To Meter Spools @ Bays # 1&2	D-700-500-118	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A

## BLOOMFIELD REFINERY

## UNDERGROUND PROCESS AND WASTEWATER LINES - Inspection &amp; Repair Schedule

Line Number	Description (Service)	Line Size	Line Length	Starting Location	End Location	Drawing Reference	Construction Material	Inspection Scheduled	Inspection Date	Inspection Results Pass/Fail	Test/ Inspection Method	Repairs/ Maint Needed	Repairs- Maint Completion date
30	(Old Kerosene) To Bay # 3	6	398 L/F	From F-706 Filter Piping	To Meter Spools @ Bays # 3	D-700-500-118	Carbon steel	2011					
31	Premium Sales Line	10	399 L/F	From F-705 Filter Piping	To Meter Spools @ Bays # 1, 2 & 3	D-700-500-118	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A
32	Old Unleaded Sales Line	10	400 L/F	From F-704 Filter Piping	To Meter Spools @ Bays # 1, 2 & 3	D-700-500-118	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A
33	Diesel To Bay # 4	8	401 L/F	From F-703 Filter Piping	To Meter Spool @ Bay # 4	D-700-500-123	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A
34	Ethanol Pump Suction Line	8	402 L/F	From Tk. # 45 Outlet Nozzle	To P-707 & P-707A Pump Suction	D-700-500-140	Carbon steel	2009					
35	Ethanol Unloading Line	4	403 L/F	From P-706 Pump Discharge	To Tk. # 45 Inlet Nozzle	D-700-500-140	Carbon steel	2009					
36	Naphtha Unloading Line	6	404 L/F	Suction Manifold @ P-607A	Unloading line @ Tk. #18 and 19	B-600-500-296	Carbon steel	2007	Sep-07	Pass	Hydrotest	None	N/A
37	Naphtha Rundown To Tk.# 35	3	405 L/F	Line From North Pipe Rack Area	To Tk. # 35 Fill Nozzle	B-600-500-232	Carbon steel	2009					
38	Naphtha Feed Line to Unit	4	406 L/F	From P-607A Pump Discharge	To North Pipe Rack Feed To Units	B-600-500-236	Carbon steel	2009					
39	Cooling Water Supply Line	12	165 L/F	From # 1 Cooling Tower Pumps	To Rack Area @ Reformer Unit	D-500-500-011	Carbon steel	2011					
40	Cooling Water Return Line	12	165 L/F	From Rack Area @ Reformer	To #1 Cooling Tower Water Inlet	D-500-500-011	Carbon steel	2011					
41	Cooling Water Supply Line	20	145 L/F	From # 2 Cooling Tower Pumps	To S. End of FCC Unit @ Twr. 207 Area	D-201-500-123	Carbon steel	2011					
42	Cooling Water Return Line	20	145 L/F	From South End of FCC Unit	To # 2 Cooling Tower Water Inlet	D-201-500-123	Carbon steel	2011					
43	Sewer Transfer Line	10	54 L/F	From Main Sewer Box # 12	To Main Sewer Box # 11	D-500-500-134	Carbon steel	2010					
44	Sewer Transfer Line	10	46 L/F	From Main Sewer Box # 11	To Observation Access Can	D-500-500-134	Carbon steel	2010					
45	Sewer Transfer Line	12	33 L/F	From Observation Access Can	To Observation Access Can	D-500-500-134	Carbon steel	2010					
46	Sewer Transfer Line	12	73 L/F	From Observation Access Can	To Main Sewer Box # 5	D-500-500-134	Carbon steel	2010					
47	Sewer Transfer Line	14	69 L/F	From Main Sewer Box # 5	To Observation Access Can	D-500-500-134	Carbon steel	2010					
48	Sewer Transfer Line	14	86 L/F	From Observation Access Can	To Main Sewer Box # 3	D-500-500-134	Carbon steel	2010					
49	Sewer Transfer Line	12	62 L/F	From Main Sewer Box # 9	To main Sewer Box # 8	D-500-500-134	Carbon steel	2010					
50	Sewer Transfer Line	12	66 L/F	From Main Sewer Box # 8	To Main Sewer Box # 7	D-500-500-134	Carbon steel	2010					
51	Sewer Transfer Line	14	86 L/F	From Main Sewer Box # 7	To Observation Access Can	D-500-500-134	Carbon steel	2010					
52	Sewer Transfer Line	14	145 L/F	From Observation Access Can	To Observation Access Can	D-500-500-134	Carbon steel	2010					
53	Sewer Transfer Line	14	100 L/F	From Observation Access Can	To Main Sewer Box # 1	D-500-500-134	Carbon steel	2010					
54	Sewer Transfer Line	12/10	TBD	From Main Sewer Box # 1	To Inlet @ API Separator	D-500-500-106	Carbon steel	2010					
55	Sewer Collection Manifold	8>4	TBD	Area East Side of # 4 Boiler	To North Side of Sewer Box # 12	D-500-500-124	Carbon steel	2010					
56	Sewer Collection Manifold	10>4	TBD	Area @ & Around Crude Twr.	To North Side Of Sewer Box # 11	D-500-500-124	Carbon steel	2010					
57	Sewer Collection Manifold	8>4	TBD	Area @ & Around E-106A & B	To Northwest Of Sewer Box # 10	D-500-500-124	Carbon steel	2010					
58	Sewer Collection Manifold	6	TBD	Area @ V-101A Desalter	To East Side Of Sewer Box #	D-500-500-124	Carbon steel	2010					



# BLOOMFIELD REFINERY UNDERGROUND PROCESS AND WASTEWATER LINES - Inspection & Repair Schedule

Line Number	Description (Service)	Line Size	Line Length	Starting Location	End Location	Drawing Reference	Construction Material	Inspection Scheduled	Inspection Date	Inspection Results Pass/Fail	Test/ Inspection Method	Repairs/ Maint Needed	Repairs/ Maint Completion date
59	Sewer Collection Manifold	10>4	TBD	Area Thru Reformer Pump Row	To Observation Access Can	D-500-500-098	Carbon steel	2010					
60	Sewer Collection Manifold	10>4	TBD	Area Along East Side of Reformer	To Observation Access Can	D-500-500-098	Carbon steel	2010					
61	Sewer Collection Manifold	8>4	TBD	Area @ & Around V101 Desalter	To Observation Access Can	D-500-500-124	Carbon steel	2010					
62	Sewer Collection Manifold	8>4	TBD	Area @ & Around T-101 Tower	To West Side Of Sewer Box # 9	D-500-500-124	Carbon steel	2010					
63	Sewer Collection Manifold	8>4	TBD	Area @ & Around P101 Charge P.	To North Side Of Sewer Box # 9	D-500-500-124	Carbon steel	2010					
64	Sewer Collection Manifold	8>4	TBD	Area @ & Around T-123 Tower	To Northwest Side Of Sewer Box # 8	D-500-500-124	Carbon steel	2010					
65	Sewer Collection Manifold	8>4	TBD	Area @ & Around Heavy Oil Exch.	To North Side Of Sewer Box # 8	D-500-500-124	Carbon steel	2010					
66	Sewer Collection Manifold	8>4	TBD	Area @ & Around Main Air Blower	To Northwest Side Of Sewer Box # 3	D-500-500-134	Carbon steel	2010					
67	Sewer Collection Manifold	6>3	TBD	Area @ Burner Fuel Loading	To Observation Access Can	D-600-500-127	Carbon steel	2010					
68	Sewer Collection Manifold	4	TBD	Area Drains @ Air Building	To Sewer Transfer Line (Box # 1 to API)	D-500-500-160	Carbon steel	2010					
69	Sewer Collection Manifold	4	TBD	P-224 Pump & Cat Surface Drain	To Sewer Transfer Line From FCC	N/A	Carbon steel	2011					
70	Sewer Collect./Transfer Line	6	TBD	Gas Con Unit Collection M.H.	To FCC Sewer Box Manhole # 1	D-500-500-102	Carbon steel	2011					
71	Sewer Transfer Line	10	TBD	From FCC Sewer Box M.H. # 1	To FCC Sewer Box Manhole # 2	D-500-500-102	Carbon steel	2011					
72	Sewer Transfer Line	10	TBD	From FCC Sewer Box M.H. # 2	To 20" Inlet @ API	D-500-500-106	Carbon steel	2011					
73	Sewer Collection Manifold	6/4	TBD	Area @ & Around Gas Con. Unit	To Gas Con. Unit Sewer Collection	D-201-500-001	Carbon steel	2011					
74	Sewer Transfer Line	10	TBD	From Treater Main Sewer Box # 4	To (New) MainSewer Box S.E. Of C-204	D-500-500-166	Carbon steel	2011					
75	Sewer Transfer Line	10	TBD	From Main Sewer Box @ C-204	To 20" Inlet @ API	D-500-500-105	Carbon steel	2011					
76	Sewer Collection Manifold	10>4	TBD	Area In & Around Treater Unit	To Treater Sewer Box At South Side Of Unit	D-500-500-122	Carbon steel	2011					
77	Sewer Collection Manifold	6>2	TBD	Area In & Around Poly Unit	To Inlet Bay @ API	D-500-500-126	Carbon steel	2011					
78	Sewer Transfer Line	10	TBD	From Sewer Box # 18 @ DHT Unit	To Sewer Box # 17 @ S.E. Corner of Poly	D-500-500-097	Carbon steel	2011					
79	Sewer Transfer Line	12	TBD	From Sewer Box # 17	To Inlet Manifold @ API Basin Area		Carbon steel	2011					
80	Sewer Collection Manifold	10>4	TBD	Area In & Around DHT/Larox Unit	To Sewer Box # 18 @ S.E. Corner of DHT		Carbon steel	2007	Dec-07	Pass	Hydrotest	None	N/A
81	Crude Transfer Line	12	99 L/F	Pipe Rack East Of LPG Sig Tks.	Pipe Rack South of Crude Unloading	D-000-900-023	Carbon steel	2008	May-08	Pass	Praxair	None	N/A
82	Crude Transfer Line	12	194 L/F	Pipe Rack South of Crude Unloading Bays	Berm South of Tank #43	D-000-900-023	Carbon steel	2008	May-08	Pass	Praxair	None	N/A

## BLOOMFIELD REFINERY

## TANKS - Inspection &amp; Repair Schedule

(\*schedule set according to API 650 &amp; 653)

Tank #	Service	Normal Capacity (bbls)	Last Test/ Inspection	Test/ Inspection Method	Next Test/ Inspection Scheduled	Date O&D-SFO Requirements Satisfied	Test/ Inspection Date	Repairs/Maint Needed	Repairs/Maint Completion Date
2*	FILTERED WATER	64,347	2000	Internal	2010	2010	3/30/2000	Cleaned Out Sediment	3/28/2000
3*	MID-GRADE	9,365	2003	Internal	2013	2013	10/1/2003	Seal Replacement	10/8/2003
4*	MID-GRADE	9,365	2003	Internal	2013	2013	9/17/2003	Seal Replacement	9/24/2003
5*	WASTE WATER SURGE	9096	2007	Internal	2017	2007	5/28/2008	None	N/A
8*	CRUDE SLOP	460	2007	Internal	2017	2007	6/7/2007	None	N/A
9*	CRUDE SLOP	460	2004	External (Concrete Liner)	2009	2009	11/2/04	None	N/A
10*	SPENT CAUSTIC	360	2007	Internal	2017	2007	8/24/2007	Repaired Hatch & Floor	8/22/2007
11*	LOW REFORMAT	50,358	2002	Internal	2012	2012	9/11/2002	Seal Replacement	9/18/2002
12*	CAT / POLY GAS	50,358	1999	Internal	2009	2009	10/28/1999	Seal Replacement	11/12/1999
13*	UNLEAD SALES	27,646	2008	Internal	2018	2008	2/20/2008	Seal Repair	2/28/2008
14*	UNLEAD SALES	27,615	2005	Internal	2015	2005	9/21/2005	None	N/A
17*	CAT FEED	38403	2007	Internal	2017	2007	7/8/2007	Floor Repair	7/29/2007
18*	#1 DIESEL SALES	50358	1999	Internal	2009	2009	8/11/1999	Seal Replacement & Floor Repair	8/11/1999
19*	#2 DIESEL SALES	34991	2000	Internal	2010	2010	06/22/00	Roof Replacement	6/20/2000
20*	NAPHTHA	10000	2007	Internal	2017	2007	10/29/07	New Construction	N/A
23*	BASE GASOLINE	38,402	2002	Internal	2012	2012	08/12/02	Seal Repair	8/11/2002
24*	ULS DIESEL	10107	2006	Internal	2016	2006	03/01/06	New Construction	N/A
25*	ULS DIESEL	10107	2006	Internal	2016	2006	02/06/06	New Construction	N/A
26*	SWEET NAPHTHA	3,264	2008	Praxair	2018	2008	05/29/08	None	N/A
27*	HEAVY BURNER FUEL	9,854	2006	Internal	2016	2006	08/31/06	Floor Repair	8/21/2006
28*	CRUDE	77,854	1999	Internal	2009	2009	11/19/99	Floor Repair	11/18/1999
29*	#2 DIESEL/FCC SLOP	16,676	2005	Internal	2015	2005	04/25/05	Repair Auto Gauge & Install Sample Port	4/23/2005
30*	PREMIUM UNLEAD BLEND	16,676	2004	Internal	2014	2004	12/20/04	Repair Seal & Pontoon	12/19/2004
31*	CRUDE	98,676	2003	Internal	2013	2013	01/09/03	Repair Roof Drain	1/8/2003
32*	PREMIUM UNLEAD SALES	17,913	1999	Internal	2009	2009	12/09/99	Repair Seal & Pontoon	12/8/1999
33*	RECOVERY WELL WATER	360	2008	Internal	2018	2008	04/09/08	None	N/A
34*	INJECTION WELL RESERVIOR	360	2002	Internal	2012	2012	11/20/02	Repair Pinhole	1/20/2002
35*	REFORMER FEED	43904	2005	Internal	2015	2005	08/29/05	Repair Seal & Recoat Roof	8/28/2008
36*	CAT / POLY GAS	43904	2005	Internal	2015	2005	08/24/05	None	N/A
37*	FRENCH DRAIN	121	2001	Internal	2011	2011	12/15/01	New Construction	N/A
38*	EAST OUTFALL	302	2003	Internal	2013	2013	04/09/08	None	N/A
41*	CRUDE STORAGE	2798	2008	Praxair	2018	2008	05/29/08	None	N/A
42A*	TERMINALS SLOP	400	2007	API 650	2017	2007	06/01/07	New Construction	N/A
42B*	TERMINALS SLOP	400	2007	API 650	2017	2007	06/01/07	New Construction	N/A
43	TERMINALS SLOP	560	O/S	O/S	O/S	O/S	O/S	Out of Service	O/S
44*	VRU NAPHTHA	1,751	2008	Praxair	2018	2008	05/29/08	None	N/A
45*	ETHANOL	4821	2008	Internal	2018	2008	02/20/08	None	N/A

# BLOOMFIELD REFINERY SEWER BOXES - Inspection & Repair Schedule

Sewer Box Number	Location	Type Material	Drawing Reference	Actual Inspection Date	Test/ Inspection Method	Inspection results Pass/Fail	Repairs/Maint Needed	Repairs/Maint Completion date
1	Northwest of Main Pipe Bridge	Concrete	D-500-500-134	4/21/2008	Visual	Pass	None	N/A
2	Southeast of Precipitator	Concrete	D-500-500-134	4/21/2008	Visual	Pass	None	N/A
3	Southeast of Main Blower	Concrete	D-500-500-134	4/21/2008	Visual	Pass	None	N/A
4	Southeast of Old Desalter	Concrete	D-500-500-134	4/23/2008	Visual	Pass	None	N/A
5	Southeast of Control Room	Concrete	D-500-500-134	4/23/2008	Visual	Pass	None	N/A
6	Southeast of Reformer	Concrete	D-500-500-124	4/23/2008	Visual	Pass	None	N/A
7	Southwest of Mainblower	Concrete	D-500-500-124	4/21/2008	Visual	Pass	None	N/A
8	South of E-113's	Concrete	D-500-500-124	4/21/2008	Visual	Pass	None	N/A
9	South of P-105's	Concrete	D-500-500-124	4/21/2008	Visual	Pass	None	N/A
10	West of New Desalter	Concrete	D-500-500-124	4/23/2008	Visual	Pass	None	N/A
11	South of T-102	Concrete	D-500-500-124	4/23/2008	Visual	Pass	None	N/A
12	South of P-103's	Concrete	D-500-500-124	4/23/2008	Visual	Pass	None	N/A
13	In Roadway South of FCCU	Concrete	D-500-500-134	4/24/2008	Visual	Pass	None	N/A
14	In Roadway Southwest of C-801's	Concrete	D-500-500-134	4/24/2008	Visual	Pass	None	N/A
15	In Roadway Southeast of Wet Gas	Concrete	D-500-500-134	4/24/2008	Visual	Pass	None	N/A
16	South of Treater	Concrete	D-500-500-134	4/24/2008	Visual	Pass	None	N/A
17	In Roadway East of DHT	Concrete	D-500-500-134	4/24/2008	Visual	Pass	None	N/A
18	In Roadway Southeast of Poly Unit	Concrete	D-500-500-134	4/24/2008	Visual	Pass	None	N/A

# BLOOMFIELD REFINERY SUMPS - Inspection & Repair Schedule

Sump Number	Location	Type Material	Drawing Reference	Actual Inspection Date	Test/ Inspection Method	Inspection results Pass/Fail	Repairs/Maint Needed	Repairs/Maint Completion date
16	Sump @ S.W. Side Of Tk. 3	Concrete	D-000-900-023	6/9/2008	Hydrotest	Pass	None	N/A
17	Sump Between Tk. 3 & 4	Concrete	D-000-900-023	6/9/2008	Hydrotest	Pass	None	N/A
18	Sump Between Tk. 4 & 5	Concrete	D-000-900-023	6/9/2008	Hydrotest	Pass	None	N/A
19	Sump @ N. Side Of Tk. 5	Concrete	D-000-900-023	6/9/2008	Hydrotest	Fail	Concrete repair	6/20/08 - Pass
20	Sump Between Tk. 11 & 12	Concrete	D-000-900-023	6/10/2008	Hydrotest	Pass	None	N/A
21	Sump Between Tk. 13 & 14	Concrete	D-000-900-023	6/9/2008	Hydrotest	Pass	None	N/A
22	Sump @ N. Side Of Tk. 17	Concrete	D-000-900-023	6/11/2008	Hydrotest	Pass	None	N/A
23	Sump @ N.E. Side Of Tk. 18	Concrete	D-000-900-023	6/10/2008	Hydrotest	Pass	None	N/A
24	Sump @ N.E. Side Of Tk. 19	Concrete	D-000-900-023	6/10/2008	Hydrotest	Pass	None	N/A
25	Sump @ S.W. Side Of Tk. 20	DW Steel	D-000-900-023	6/11/2008	Hydrotest	Pass	None	N/A
26	Sump @ S. Side Of Tk. 23	Concrete	D-000-900-023	6/16/2008	Hydrotest	Fail	Replace plate	6/24/08 - Pass
27	Sump @ E. Side Of Tk. 24	DW Steel	D-000-900-023	6/16/2008	Hydrotest	Pass	None	N/A
28	Sump @ E. Side Of Tk. 25	DW Steel	D-000-900-023	6/16/2008	Hydrotest	Pass	None	N/A
29	Sump @ N.W. Side Of Tk. 26	Concrete	D-000-900-023	6/11/2008	Hydrotest	Pass	None	N/A
30	Sump @ S.E. Side Of Tk. 27	Concrete	D-000-900-023	6/10/2008	Hydrotest	Pass	None	N/A
31	Sump @ West Side Of Tk. 28	Concrete	D-000-900-023	6/17/2008	Hydrotest	Pass	None	N/A
32	Sump @ N.E. Side Of Tk. 29	Concrete	D-000-900-023	6/23/2008	Hydrotest	Pass	None	N/A
33	Sump @ S.W. Side Of Tk. 30	Concrete	D-000-900-023	6/16/2008	Hydrotest	Pass	None	N/A
34	Sump @ N.W. Side Of Tk. 31	Concrete	D-000-900-023	6/17/2008	Hydrotest	Pass	None	N/A
35	Sump @ S.E. Side Of Tk. 31	Concrete	D-000-900-023	6/17/2008	Hydrotest	Pass	None	N/A
36	Sump @ East Side Of Tk. 32	Concrete	D-000-900-023	6/10/2008	Hydrotest	Pass	None	N/A
37	Sump @ N.E. Side Of Tk. 35	Concrete	D-000-900-023	6/11/2008	Hydrotest	Pass	None	N/A
38	Sump @ N.E. Side Of Tk. 36	DW Steel	D-000-900-023	6/10/2008	Hydrotest	Pass	None	N/A
39	Sump @ S. Side Of Tk. 18	DW Steel	D-000-900-023	6/11/2008	Hydrotest	Pass	None	N/A
40	Sump @ S. Side Of Tk. 19	Concrete	D-000-900-023	6/11/2008	Hydrotest	Pass	None	N/A
41	Sump @ S. Side Of Flare	Concrete	D-000-900-023	11/6/2008	Hydrotest	Pass	None	N/A
42	Sump @ N.W. Of Precipitator	Concrete	D-000-900-023	10/21/2008	Hydrotest	Pass	None	N/A

# BLOOMFIELD REFINERY Separator/Pond - Inspection & Repair Schedule

Pond Number	Location	Type Material	Inspection Scheduled	Test/ Inspection Method	Actual Inspection Date	Inspection results Pass/Fail	Repairs/Maint Needed	Repairs/Maint Completion Date
V-601	API Separator	Concrete	2008	Internal	1/21/2008	Pass	None	N/A
V-601	API Separator	Concrete	2008	Internal	11/17/2008	Pass	None	N/A
1	Aeration Lagoon #1	HDPE	2008	Internal	11/7/2008	Fail	Replaced crossover Piping btwn #1 Aeration Lagoon and #2 Aeration as well as btwn #1 Aeration Lagoon and #3 Aeration Lagoon. Liner/Boots Replaced and minor punctures in Liner Repaired	11/18/2008
2	Aeration Lagoon #2	HDPE	2008	Internal	12/22/2008	Fail	Liner/Boots Replaced btwn #2 Aeration Lagoon and #1 Aeration Lagoon. Minor scrapes and gouges (nothing through the liner) were patched for reinforcement	12/29/2008
3	Aeration Lagoon #3	HDPE	2008	Internal	1/19/2009	Fail	Liner/Boots replaced btwn #3 Aeration Lagoon and #1 Aeration Lagoon. Also replaced discharge piping to pump sump as well as the Liner/Boot for that piping. Minor scrapes and gouges (nothing through the liner) are patched for reinforcement	2/4/2009
4	North Evaporation Pond	HDPE	2009					
5	South Evaporation Pond	HDPE	2013					



## Section 15.0 North Barrier Wall

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# Observation Well Fluids Monitoring Jan. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	1/14/2008	5506.62	12.26	NPP	12.06	5494.56	NPP
	1/28/2008	5506.62	12.26	NPP	12.04	5494.58	NPP
OW 1+50	1/14/2008	5508.03	14.36	13.87	14.30	5494.07	0.43
	1/28/2008	5508.03	14.36	13.91	14.26	5494.05	0.35
OW 3+85	1/14/2008	5507.31	15.06	13.46	13.50	5493.84	0.04
	1/28/2008	5507.31	15.06	13.47	13.52	5493.83	0.05
OW 5+50	1/14/2008	5507.59	13.67	NPP	DRY		NPP
	1/28/2008	5507.59	13.67	NPP	DRY		NPP
OW 6+70	1/14/2008	5504.78	14.67	NPP	DRY		NPP
	1/28/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	1/14/2008	5506.53	15.99	NPP	DRY		NPP
	1/28/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+15	1/14/2008	5506.70	16.59	NPP	12.49	5494.21	NPP
	1/28/2008	5506.70	16.59	NPP	12.41	5494.29	NPP
OW 14+10	1/14/2008	5508.14	12.96	NPP	DRY		NPP
	1/28/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+60	1/14/2008	5508.43	15.21	12.71	12.75	5495.71	0.04
	1/28/2008	5508.43	15.21	NPP	12.72	5495.71	NPP

NPP = No Product Present    NWP = No Water Present

# Observation Well Fluids Monitoring Jan. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 19+ 50	1/14/2008	5508.03	13.00	NPP	DRY		NPP
	1/28/2008	5508.03	13.00	NPP	DRY		NPP
OW 22+ 00	1/14/2008	5506.91	14.16	NPP	11.65	5495.26	NPP
	1/28/2008	5506.91	14.16	NPP	11.69	5495.22	NPP
OW 23+ 10	1/14/2008	5514.12	18.34	NPP	16.27	5497.85	NPP
	1/28/2008	5514.12	18.34	NPP	15.38	5498.74	NPP
OW 23+ 90	1/14/2008	5515.18	18.01	NPP	17.15	5498.03	NPP
	1/28/2008	5515.18	18.01	NPP	17.05	5498.13	NPP
OW 25+ 70	1/14/2008	5509.00	13.98	NPP	10.82	5498.18	NPP
	1/28/2008	5509.00	13.98	NPP	10.73	5498.27	NPP

NPP = No Product Present NWP = No Water Present

# Collection Well Fluids Monitoring Jan. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	1/14/2008	5506.68	14.09	NPP	8.53	5498.15	NPP
	1/28/2008	5506.68	14.09	NPP	8.52	5498.16	NPP
CW 1+50	1/14/2008	5505.13	13.74	NPP	7.33	5497.80	NPP
	1/28/2008	5505.13	13.74	NPP	7.22	5497.91	NPP
CW 3+85	1/14/2008	5503.87	13.11	NPP	6.22	5497.65	NPP
	1/28/2008	5503.87	13.11	NPP	6.09	5497.78	NPP
CW 5+50	1/14/2008	5503.76	12.27	NPP	6.59	5497.17	NPP
	1/28/2008	5503.76	12.27	NPP	6.53	5497.23	NPP
CW 6+70	1/14/2008	5503.84	11.45	NPP	7.12	5496.72	NPP
	1/28/2008	5503.84	11.45	NPP	7.05	5496.79	NPP
CW 8+10	1/14/2008	5504.02	11.63	NPP	8.06	5495.96	NPP
	1/28/2008	5504.02	11.63	NPP	7.92	5496.10	NPP
CW 8+45	1/14/2008	5503.80	12.6	8.02	8.15	5495.75	0.13
	1/28/2008	5503.80	12.6	7.89	7.93	5495.90	0.04
CW 11+15	1/14/2008	5503.95	12.27	NPP	6.17	5497.78	NPP
	1/28/2008	5503.95	12.27	NPP	6.00	5497.95	NPP
CW 14+10	1/14/2008	5504.39	13.05	NPP	6.53	5497.86	NPP
	1/28/2008	5504.39	13.05	NPP	6.33	5498.06	NPP

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# Collection Well Fluids Monitoring Jan. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+ 60	1/14/2008	5504.32	12.86	NPP	6.29	5498.03	NPP
	1/28/2008	5504.32	12.86	NPP	6.25	5498.07	NPP
CW 19+ 50	1/14/2008	5504.52	9.99	NPP	6.65	5497.87	NPP
	1/28/2008	5504.52	9.99	NPP	6.49	5498.03	NPP
CW 22+ 00	1/14/2008	5508.04	12.34	NPP	9.08	5498.96	NPP
	1/28/2008	5508.04	12.34	NPP	8.91	5499.13	NPP
CW 23+ 10	1/14/2008	5510.04	14.65	NPP	10.73	5499.31	NPP
	1/28/2008	5510.04	14.65	NPP	10.69	5499.35	NPP
CW 23+ 90	1/14/2008	5507.32	11.72	NPP	8.19	5499.13	NPP
	1/28/2008	5507.32	11.72	NPP	8.16	5499.16	NPP
CW 25+ 95	1/14/2008	5505.90	12.25	NPP	7.19	5498.71	NPP
	1/28/2008	5505.90	12.25	NPP	7.17	5498.73	NPP

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# Monitoring Well Fluids Monitoring Jan. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	1/16/2008	5510.31	22.94	NPP	11.09	5499.22	NPP
	1/28/2008	5510.31	22.94	NPP	10.74	5499.57	NPP
MW #12	1/16/2008	5501.61	14.98	NPP	10.19	5491.42	NPP
	1/28/2008	5501.61	14.98	NPP	10.22	5491.39	NPP
MW #20	1/16/2008	5519.90	27.13	20.74	21.45	5499.02	0.71
	1/28/2008	5519.90	27.13	20.72	21.40	5499.04	0.68
MW #21	1/16/2008	5521.99	30.38	21.86	21.93	5500.12	0.07
	1/28/2008	5521.99	30.38	21.85	21.92	5500.13	0.07
MW #39	1/16/2008	5520.83	38.34	NPP	26.20	5494.63	NPP
	1/28/2008	5520.83	38.34	NPP	25.83	5495.00	NPP
MW #45	1/14/2008	5506.36	16.92	NPP	11.82	5494.54	NPP
	1/28/2008	5506.36	16.92	NPP	11.66	5494.70	NPP
MW #46	1/14/2008	5504.65	10.39	NPP	DRY		NPP
	1/28/2008	5504.65	10.39	NPP	DRY		NPP
MW #47	1/14/2008	5506.77	14.28	12.76	13.06	5493.95	0.30
	1/28/2008	5506.77	14.28	12.81	12.82	5493.96	0.01

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# Observation Well Fluids Monitoring Feb. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (D W)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	2/11/2008	5506.62	12.26	NPP	11.59	5495.03	NPP
	2/25/2008	5506.62	12.26	NPP	11.55	5495.07	NPP
OW 1+50	2/11/2008	5508.03	14.36	13.68	13.85	5494.32	0.17
	2/25/2008	5508.03	14.36	13.64	13.66	5494.39	0.02
OW 3+85	2/11/2008	5507.31	15.06	13.14	13.35	5494.13	0.21
	2/25/2008	5507.31	15.06	13.12	13.13	5494.19	0.01
OW 5+50	2/11/2008	5507.59	13.67	NPP	13.68	5493.91	NPP
	2/25/2008	5507.59	13.67	NPP	13.70	5493.89	NPP
OW 6+70	2/11/2008	5504.78	14.67	NPP	DRY		NPP
	2/25/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	2/11/2008	5506.53	15.99	NPP	DRY		NPP
	2/25/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+15	2/11/2008	5506.70	16.59	NPP	12.51	5494.19	NPP
	2/25/2008	5506.70	16.59	NPP	12.50	5494.20	NPP
OW 14+10	2/11/2008	5508.14	12.96	NPP	DRY		NPP
	2/25/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+60	2/11/2008	5508.43	15.21	12.71	12.24	5495.81	-0.47
	2/25/2008	5508.43	15.21	NPP	12.60	5495.83	NPP

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# Observation Well Fluids Monitoring Feb. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 19+ 50	2/11/2008	5508.03	13.00	NPP	DRY		NPP
	2/11/2008	5508.03	13.00	NPP	11.79	5496.24	NPP
OW 22+ 00	2/11/2008	5506.91	14.16	NPP	10.25	5496.66	NPP
	2/25/2008	5506.91	14.16	NPP	11.08	5495.83	NPP
OW 23+ 10	2/11/2008	5514.12	18.34	NPP	16.15	5497.97	NPP
	2/25/2008	5514.12	18.34	NPP	16.19	5497.93	NPP
OW 23+ 90	2/11/2008	5515.18	18.01	NPP	17.01	5498.17	NPP
	2/25/2008	5515.18	18.01	NPP	17.04	5498.14	NPP
OW 25+ 70	2/11/2008	5509.00	13.98	NPP	10.70	5498.30	NPP
	2/25/2008	5509.00	13.98	NPP	10.73	5498.27	NPP

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# Collection Well Fluids Monitoring Feb. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	2/11/2008	5506.68	14.09	NPP	8.33	5498.35	NPP
	2/25/2008	5506.68	14.09	NPP	8.39	5498.29	NPP
CW 1+50	2/11/2008	5505.13	13.74	NPP	7.09	5498.04	NPP
	2/25/2008	5505.13	13.74	NPP	7.08	5498.05	NPP
CW 3+85	2/11/2008	5503.87	13.11	NPP	5.89	5497.98	NPP
	2/25/2008	5503.87	13.11	NPP	5.83	5498.04	NPP
CW 5+50	2/11/2008	5503.76	12.27	NPP	6.38	5497.38	NPP
	2/25/2008	5503.76	12.27	NPP	6.4	5497.36	NPP
CW 6+70	2/11/2008	5503.84	11.45	NPP	6.91	5496.93	NPP
	2/25/2008	5503.84	11.45	NPP	6.77	5497.07	NPP
CW 8+10	2/11/2008	5504.02	11.63	NPP	7.87	5496.15	NPP
	2/25/2008	5504.02	11.63	NPP	7.83	5496.19	NPP
CW 8+45	2/11/2008	5503.80	12.6	7.87	7.93	5495.92	0.06
	2/25/2008	5503.80	12.6	7.80	7.87	5495.99	0.07
CW 11+15	2/11/2008	5503.95	12.27	NPP	6.06	5497.89	NPP
	2/25/2008	5503.95	12.27	NPP	6.07	5497.88	NPP
CW 14+10	2/11/2008	5504.39	13.05	NPP	6.39	5498.00	NPP
	2/25/2008	5504.39	13.05	NPP	6.43	5497.96	NPP

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# Collection Well Fluids Monitoring Feb. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+ 60	2/11/2008	5504.32	12.86	NPP	6.25	5498.07	NPP
	2/25/2008	5504.32	12.86	NPP	6.28	5498.04	NPP
CW 19+ 50	2/11/2008	5504.52	9.99	NPP	6.49	5498.03	NPP
	2/25/2008	5504.52	9.99	NPP	6.51	5498.01	NPP
CW 22+ 00	2/11/2008	5508.04	12.34	NPP	8.98	5499.06	NPP
	2/25/2008	5508.04	12.34	NPP	8.97	5499.07	NPP
CW 23+ 10	2/11/2008	5510.04	14.65	NPP	10.62	5499.42	NPP
	2/25/2008	5510.04	14.65	NPP	10.6	5499.44	NPP
CW 23+ 90	2/11/2008	5507.32	11.72	NPP	8.12	5499.20	NPP
	2/25/2008	5507.32	11.72	NPP	8.10	5499.22	NPP
CW 25+ 95	2/11/2008	5505.90	12.25	NPP	7.16	5498.74	NPP
	2/25/2008	5505.90	12.25	NPP	7.15	5498.75	NPP

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# Monitoring Well Fluids Monitoring Feb. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	2/11/2008	5510.31	22.94	NPP	10.24	5500.07	NPP
	2/25/2008	5510.31	22.94	NPP	10.58	5499.73	NPP
MW #12	2/11/2008	5501.61	14.98	NPP	10.03	5491.58	NPP
	2/25/2008	5501.61	14.98	NPP	9.68	5491.93	NPP
MW #20	2/11/2008	5519.90	27.13	20.73	21.35	5499.05	0.62
	2/25/2008	5519.90	27.13	20.70	21.25	5499.09	0.55
MW #21	2/11/2008	5521.99	30.38	21.77	21.78	5500.22	0.01
	2/25/2008	5521.99	30.38	21.68	21.84	5500.28	0.16
MW #39	2/11/2008	5520.83	38.34	NPP	25.85	5494.98	NPP
	2/25/2008	5520.83	38.34	NPP	25.84	5494.99	NPP
MW #45	2/11/2008	5506.36	16.92	NPP	11.78	5494.58	NPP
	2/25/2008	5506.36	16.92	NPP	11.77	5494.59	NPP
MW #46	2/11/2008	5504.65	10.39	NPP	DRY		NPP
	2/25/2008	5504.65	10.39	NPP	DRY		NPP
MW #47	2/11/2008	5506.77	14.28	12.63	12.68	5494.13	0.05
	2/25/2008	5506.77	14.28	12.58	12.68	5494.17	0.10

NPP = No Product Present      NWP = No Water Present

# Observation Well Fluids Monitoring March 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	3/10/2008	5506.62	12.26	NPP	11.57	5495.05	NPP
	3/24/2008	5506.62	12.26	NPP	11.61	5495.01	NPP
OW 1+50	3/10/2008	5508.03	14.36	13.62	13.65	5494.40	0.03
	3/24/2008	5508.03	14.36	13.61	13.68	5494.41	0.07
OW 3+85	3/10/2008	5507.31	15.06	13.06	13.18	5494.23	0.12
	3/24/2008	5507.31	15.06	13.02	13.33	5494.23	0.31
OW 5+50	3/10/2008	5507.59	13.67	NPP	13.56	5494.03	NPP
	3/24/2008	5507.59	13.67	NPP	13.62	5493.97	NPP
OW 6+70	3/10/2008	5504.78	14.67	NPP	DRY		NPP
	3/24/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	3/10/2008	5506.53	15.99	NPP	DRY		NPP
	3/24/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+15	3/10/2008	5506.70	16.59	NPP	12.48	5494.22	NPP
	3/24/2008	5506.70	16.59	NPP	12.52	5494.18	NPP
OW 14+10	3/10/2008	5508.14	12.96	NPP	DRY		NPP
	3/24/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+60	3/10/2008	5508.43	15.21	NPP	12.13	5496.30	NPP
	3/24/2008	5508.43	15.21	NPP	12.27	5496.16	NPP

NPP = No Product Present    NWP = No Water Present

# Observation Well Fluids Monitoring March 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 19+ 50	3/10/2008	5508.03	13.00	NPP	11.47	5496.56	NPP
	3/24/2008	5508.03	13.00	NPP	11.52	5496.51	NPP
OW 22+ 00	3/10/2008	5506.91	14.16	NPP	11.42	5495.49	NPP
	3/24/2008	5506.91	14.16	NPP	11.54	5495.37	NPP
OW 23+ 10	3/10/2008	5514.12	18.34	NPP	16.22	5497.90	NPP
	3/24/2008	5514.12	18.34	NPP	16.28	5497.84	NPP
OW 23+ 90	3/10/2008	5515.18	18.01	NPP	17.05	5498.13	NPP
	3/24/2008	5515.18	18.01	NPP	17.05	5498.13	NPP
OW 25+ 70	3/10/2008	5509.00	13.98	NPP	10.72	5498.28	NPP
	3/24/2008	5509.00	13.98	NPP	10.72	5498.28	NPP

NPP = No Product Present    NWP = No Water Present

# Collection Well Fluids Monitoring March 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	3/10/2008	5506.68	14.09	NPP	8.44	5498.24	NPP
	3/24/2008	5506.68	14.09	NPP	8.54	5498.14	NPP
CW 1+50	3/10/2008	5505.13	13.74	NPP	7.05	5498.08	NPP
	3/24/2008	5505.13	13.74	NPP	7.08	5498.05	NPP
CW 3+85	3/10/2008	5503.87	13.11	NPP	5.77	5498.10	NPP
	3/24/2008	5503.87	13.11	NPP	5.76	5498.11	NPP
CW 5+50	3/10/2008	5503.76	12.27	NPP	6.42	5497.34	NPP
	3/24/2008	5503.76	12.27	NPP	6.43	5497.33	NPP
CW 6+70	3/10/2008	5503.84	11.45	NPP	6.81	5497.03	NPP
	3/24/2008	5503.84	11.45	NPP	6.79	5497.05	NPP
CW 8+10	3/10/2008	5504.02	11.63	NPP	7.82	5496.20	NPP
	3/24/2008	5504.02	11.63	NPP	7.77	5496.25	NPP
CW 8+45	3/10/2008	5503.80	12.6	7.82	7.86	5495.97	0.04
	3/24/2008	5503.80	12.6	7.76	7.77	5496.04	0.01
CW 11+15	3/10/2008	5503.95	12.27	NPP	6.10	5497.85	NPP
	3/24/2008	5503.95	12.27	NPP	6.03	5497.92	NPP
CW 14+10	3/10/2008	5504.39	13.05	NPP	6.48	5497.91	NPP
	3/24/2008	5504.39	13.05	NPP	6.41	5497.98	NPP

NPP = No Product Present

NWP = No Water Present

# Collection Well Fluids Monitoring March 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+ 60	3/10/2008	5504.32	12.86	NPP	6.31	5498.01	NPP
	3/24/2008	5504.32	12.86	NPP	6.27	5498.05	NPP
CW 19+ 50	3/10/2008	5504.52	9.99	NPP	6.56	5497.96	NPP
	3/24/2008	5504.52	9.99	NPP	6.53	5497.99	NPP
CW 22+ 00	3/10/2008	5508.04	12.34	NPP	8.98	5499.06	NPP
	3/24/2008	5508.04	12.34	NPP	9.00	5499.04	NPP
CW 23+ 10	3/10/2008	5510.04	14.65	NPP	10.59	5499.45	NPP
	3/24/2008	5510.04	14.65	NPP	10.63	5499.41	NPP
CW 23+ 90	3/10/2008	5507.32	11.72	NPP	8.11	5499.21	NPP
	3/24/2008	5507.32	11.72	NPP	8.14	5499.18	NPP
CW 25+ 95	3/10/2008	5505.90	12.25	NPP	7.15	5498.75	NPP
	3/24/2008	5505.90	12.25	NPP	7.16	5498.74	NPP

NPP = No Product Present      NWP = No Water Present



# Monitoring Well Fluids Monitoring March 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	3/10/2008	5510.31	22.94	NPP	10.84	5499.47	NPP
	3/24/2008	5510.31	22.94	NPP	11	5499.31	NPP
MW #12	3/10/2008	5501.61	14.98	NPP	9.62	5491.99	NPP
	3/24/2008	5501.61	14.98	NPP	9.54	5492.07	NPP
MW #20	3/10/2008	5519.90	27.13	20.71	21.24	5499.08	0.53
	3/24/2008	5519.90	27.13	20.70	21.20	5499.10	0.50
MW #21	3/10/2008	5521.99	30.38	21.62	21.75	5500.34	0.13
	3/24/2008	5521.99	30.38	21.65	21.8	5500.31	0.15
MW #39	3/10/2008	5520.83	38.34	NPP	25.82	5495.01	NPP
	3/24/2008	5520.83	38.34	NPP	25.82	5495.01	NPP
MW #45	3/10/2008	5506.36	16.92	NPP	11.82	5494.54	NPP
	3/24/2008	5506.36	16.92	NPP	11.76	5494.60	NPP
MW #46	3/10/2008	5504.65	10.39	NPP	DRY		NPP
	3/24/2008	5504.65	10.39	NPP	DRY		NPP
MW #47	3/10/2008	5506.77	14.28	12.48	12.65	5494.26	0.17
	3/24/2008	5506.77	14.28	12.55	12.67	5494.20	0.12

NPP = No Product Present      NWP = No Water Present

# Observation Well Fluids Monitoring April 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	4/7/2008	5506.62	12.26	NPP	11.66	5494.96	NPP
	4/21/2008	5506.62	12.26	NPP	11.66	5494.96	NPP
OW 1+50	4/7/2008	5508.03	14.36	13.60	13.80	5494.39	0.20
	4/21/2008	5508.03	14.36	13.65	13.86	5494.34	0.21
OW 3+85	4/7/2008	5507.31	15.06	13.01	13.44	5494.21	0.43
	4/21/2008	5507.31	15.06	13.03	13.58	5494.17	0.55
OW 5+50	4/7/2008	5507.59	13.67	NPP	13.51	5494.08	NPP
	4/21/2008	5507.59	13.67	NPP	13.47	5494.12	NPP
OW 6+70	4/7/2008	5504.78	14.67	NPP	DRY		NPP
	4/21/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	4/7/2008	5506.53	15.99	NPP	DRY		NPP
	4/21/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+15	4/7/2008	5506.70	16.59	11.35	11.42	5495.34	0.07
	4/21/2008	5506.70	16.59	12.29	12.58	5494.35	0.29
OW 14+10	4/7/2008	5508.14	12.96	NPP	DRY		NPP
	4/21/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+60	4/7/2008	5508.43	15.21	NPP	12.28	5496.15	NPP
	4/21/2008	5508.43	15.21	NPP	12.36	5496.07	NPP

NPP = No Product Present NWP = No Water Present

# Observation Well Fluids Monitoring April 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 19+50	4/7/2008	5508.03	13.00	NPP	11.55	5496.48	NPP
	4/21/2008	5508.03	13.00	NPP	11.47	5496.56	NPP
OW 22+00	4/7/2008	5506.91	14.16	NPP	11.57	5495.34	NPP
	4/21/2008	5506.91	14.16	NPP	11.69	5495.22	NPP
OW 23+10	4/7/2008	5514.12	18.34	NPP	16.22	5497.90	NPP
	4/21/2008	5514.12	18.34	NPP	16.21	5497.91	NPP
OW 23+90	4/7/2008	5515.18	18.01	NPP	17.04	5498.14	NPP
	4/21/2008	5515.18	18.01	NPP	17.07	5498.11	NPP
OW 25+70	4/7/2008	5509.00	13.98	NPP	10.68	5498.32	NPP
	4/21/2008	5509.00	13.98	NPP	10.67	5498.33	NPP

NPP = No Product Present    NWP = No Water Present

# Collection Well Fluids Monitoring April 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	4/7/2008	5506.68	14.09	NPP	8.59	5498.09	NPP
	4/21/2008	5506.68	14.09	NPP	8.4	5498.28	NPP
CW 1+50	4/7/2008	5505.13	13.74	NPP	7.11	5498.02	NPP
	4/21/2008	5505.13	13.74	NPP	6.87	5498.26	NPP
CW 3+85	4/7/2008	5503.87	13.11	NPP	5.77	5498.10	NPP
	4/21/2008	5503.87	13.11	NPP	5.67	5498.20	NPP
CW 5+50	4/7/2008	5503.76	12.27	NPP	6.43	5497.33	NPP
	4/21/2008	5503.76	12.27	NPP	6.35	5497.41	NPP
CW 6+70	4/7/2008	5503.84	11.45	NPP	6.76	5497.08	NPP
	4/21/2008	5503.84	11.45	NPP	6.66	5497.18	NPP
CW 8+10	4/7/2008	5504.02	11.63	NPP	7.66	5496.36	NPP
	4/21/2008	5504.02	11.63	NPP	7.64	5496.38	NPP
CW 8+45	4/7/2008	5503.80	12.6	7.63	7.64	5496.17	0.01
	4/21/2008	5503.80	12.6	7.61	7.62	5496.19	0.01
CW 11+15	4/7/2008	5503.95	12.27	NPP	5.98	5497.97	NPP
	4/21/2008	5503.95	12.27	NPP	6.03	5497.92	NPP
CW 14+10	4/7/2008	5504.39	13.05	NPP	6.36	5498.03	NPP
	4/21/2008	5504.39	13.05	NPP	6.44	5497.95	NPP

NPP = No Product Present      NWP = No Water Present

# Collection Well Fluids Monitoring April 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+ 60	4/7/2008	5504.32	12.86	NPP	6.25	5498.07	NPP
	4/21/2008	5504.32	12.86	NPP	6.29	5498.03	NPP
CW 19+ 50	4/7/2008	5504.52	9.99	NPP	6.53	5497.99	NPP
	4/21/2008	5504.52	9.99	NPP	6.47	5498.05	NPP
CW 22+ 00	4/7/2008	5508.04	12.34	NPP	9.00	5499.04	NPP
	4/21/2008	5508.04	12.34	NPP	9.01	5499.03	NPP
CW 23+ 10	4/7/2008	5510.04	14.65	NPP	10.65	5499.39	NPP
	4/21/2008	5510.04	14.65	10.63	10.66	5499.40	0.03
CW 23+ 90	4/7/2008	5507.32	11.72	NPP	8.14	5499.18	NPP
	4/21/2008	5507.32	11.72	NPP	8.14	5499.18	NPP
CW 25+ 95	4/7/2008	5505.90	12.25	7.13	7.15	5498.77	0.02
	4/21/2008	5505.90	12.25	NPP	7.15	5498.75	NPP

NPP = No Product Present      NWPP = No Water Present



# Monitoring Well Fluids Monitoring April 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	4/7/2008	5510.31	22.94	NPP	11.13	5499.18	NPP
	4/21/2008	5510.31	22.94	NPP	11.07	5499.24	NPP
MW #12	4/7/2008	5501.61	14.98	NPP	9.56	5492.05	NPP
	4/21/2008	5501.61	14.98	NPP	9.61	5492.00	NPP
MW #20	4/7/2008	5519.90	27.13	20.69	21.03	5499.14	0.34
	4/21/2008	5519.90	27.13	20.70	21.50	5499.04	0.80
MW #21	4/7/2008	5521.99	30.38	21.69	21.82	5500.27	0.13
	4/21/2008	5521.99	30.38	21.74	21.85	5500.23	0.11
MW #39	4/7/2008	5520.83	38.34	NPP	25.78	5495.05	NPP
	4/21/2008	5520.83	38.34	NPP	25.75	5495.08	NPP
MW #45	4/7/2008	5506.36	16.92	NPP	11.63	5494.73	NPP
	4/21/2008	5506.36	16.92	NPP	11.66	5494.70	NPP
MW #46	4/7/2008	5504.65	10.39	NPP	DRY		NPP
	4/21/2008	5504.65	10.39	NPP	DRY		NPP
MW #47	4/7/2008	5506.77	14.28	12.57	12.68	5494.18	0.11
	4/21/2008	5506.77	14.28	12.51	12.92	5494.18	0.41

NPP = No Product Present      NWP = No Water Present

# Observation Well Fluids Monitoring MAY 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	5/5/2008	5506.62	12.26	NPP	11.61	5495.01	NPP
	5/19/2008	5506.62	12.26	NPP	11.55	5495.07	NPP
OW 1+50	5/5/2008	5508.03	14.36	13.63	13.89	5494.35	0.26
	5/19/2008	5508.03	14.36	13.58	13.90	5494.39	0.32
OW 3+85	5/5/2008	5507.31	15.06	13.04	13.67	5494.14	0.63
	5/19/2008	5507.31	15.06	13.03	13.76	5494.13	0.73
OW 5+50	5/5/2008	5507.59	13.67	NPP	13.47	5494.12	NPP
	5/19/2008	5507.59	13.67	NPP	13.47	5494.12	NPP
OW 6+70	5/5/2008	5504.78	14.67	NPP	DRY		NPP
	5/19/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	5/5/2008	5506.53	15.99	NPP	DRY		NPP
	5/19/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+15	5/5/2008	5506.70	16.59	12.30	12.59	5494.34	0.29
	5/19/2008	5506.70	16.59	12.24	12.71	5494.37	0.47
OW 14+10	5/5/2008	5508.14	12.96	NPP	DRY		NPP
	5/19/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+60	5/5/2008	5508.43	15.21	NPP	12.40	5496.03	NPP
	5/19/2008	5508.43	15.21	NPP	12.49	5495.94	NPP

NPP = No Product Present    NWP = No Water Present

# Observation Well Fluids Monitoring May 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 19+50	5/5/2008	5508.03	13.00	NPP	11.7	5496.33	NPP
	5/19/2008	5508.03	13.00	NPP	11.98	5496.05	NPP
OW 22+00	5/5/2008	5506.91	14.16	NPP	11.77	5495.14	NPP
	5/19/2008	5506.91	14.16	NPP	11.83	5495.08	NPP
OW 23+10	5/5/2008	5514.12	18.34	NPP	16.25	5497.87	NPP
	5/19/2008	5514.12	18.34	NPP	16.23	5497.89	NPP
OW 23+90	5/5/2008	5515.18	18.01	NPP	17.07	5498.11	NPP
	5/19/2008	5515.18	18.01	NPP	17.06	5498.12	NPP
OW 25+70	5/5/2008	5509.00	13.98	NPP	10.65	5498.35	NPP
	5/19/2008	5509.00	13.98	NPP	10.68	5498.32	NPP

NPP = No Product Present    NWP = No Water Present

# Collection Well Fluids Monitoring May 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	5/5/2008	5506.68	14.09	NPP	8.46	5498.22	NPP
	5/19/2008	5506.68	14.09	NPP	8.48	5498.20	NPP
CW 1+50	5/5/2008	5505.13	13.74	NPP	7.02	5498.11	NPP
	5/19/2008	5505.13	13.74	NPP	7.09	5498.04	NPP
CW 3+85	5/5/2008	5503.87	13.11	NPP	5.70	5498.17	NPP
	5/19/2008	5503.87	13.11	NPP	5.78	5498.09	NPP
CW 5+50	5/5/2008	5503.76	12.27	NPP	6.35	5497.41	NPP
	5/19/2008	5503.76	12.27	NPP	6.39	5497.37	NPP
CW 6+70	5/5/2008	5503.84	11.45	NPP	6.68	5497.16	NPP
	5/19/2008	5503.84	11.45	NPP	6.73	5497.11	NPP
CW 8+10	5/5/2008	5504.02	11.63	NPP	7.65	5496.37	NPP
	5/19/2008	5504.02	11.63	NPP	7.65	5496.37	NPP
CW 8+45	5/5/2008	5503.80	12.6	7.61	7.62	5496.19	0.01
	5/19/2008	5503.80	12.6	7.64	7.65	5496.16	0.01
CW 11+15	5/5/2008	5503.95	12.27	NPP	5.94	5498.01	NPP
	5/19/2008	5503.95	12.27	NPP	5.98	5497.97	NPP
CW 14+10	5/5/2008	5504.39	13.05	NPP	6.38	5498.01	NPP
	5/19/2008	5504.39	13.05	NPP	6.43	5497.96	NPP

NPP = No Product Present      NWP = No Water Present

# Collection Well Fluids Monitoring May 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+ 60	5/5/2008	5504.32	12.86	NPP	6.29	5498.03	NPP
	5/19/2008	5504.32	12.86	NPP	6.31	5498.01	NPP
CW 19+ 50	5/5/2008	5504.52	9.99	NPP	6.45	5498.07	NPP
	5/19/2008	5504.52	9.99	NPP	6.48	5498.04	NPP
CW 22+ 00	5/5/2008	5508.04	12.34	NPP	9.00	5499.04	NPP
	5/19/2008	5508.04	12.34	NPP	9.00	5499.04	NPP
CW 23+ 10	5/5/2008	5510.04	14.65	NPP	10.64	5499.40	NPP
	5/19/2008	5510.04	14.65	NPP	10.65	5499.39	NPP
CW 23+ 90	5/5/2008	5507.32	11.72	NPP	8.13	5499.19	NPP
	5/19/2008	5507.32	11.72	NPP	8.14	5499.18	NPP
CW 25+ 95	5/5/2008	5505.90	12.25	NPP	7.14	5498.76	NPP
	5/19/2008	5505.90	12.25	NPP	7.15	5498.75	NPP

NPP = No Product Present      NWP = No Water Present



# Monitoring Well Fluids Monitoring May 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	5/5/2008	5510.31	22.94	NPP	10.95	5499.36	NPP
	5/19/2008	5510.31	22.94	NPP	10.89	5499.42	NPP
MW #12	5/5/2008	5501.61	14.98	NPP	9.58	5492.03	NPP
	5/19/2008	5501.61	14.98	NPP	9.57	5492.04	NPP
MW #20	5/5/2008	5519.90	27.13	20.68	21.11	5499.13	0.43
	5/19/2008	5519.90	27.13	20.71	21.13	5499.11	0.42
MW #21	5/5/2008	5521.99	30.38	21.72	21.82	5500.25	0.10
	5/19/2008	5521.99	30.38	21.74	21.85	5500.23	0.11
MW #39	5/5/2008	5520.83	38.34	NPP	25.80	5495.03	NPP
	5/19/2008	5520.83	38.34	NPP	25.78	5495.05	NPP
MW #45	5/5/2008	5506.36	16.92	11.38	11.63	5494.93	0.25
	5/19/2008	5506.36	16.92	NPP	11.65	5494.71	NPP
MW #46	5/5/2008	5504.65	10.39	NPP	DRY		NPP
	5/19/2008	5504.65	10.39	NPP	DRY		NPP
MW #47	5/5/2008	5506.77	14.28	12.54	13.04	5494.13	0.50
	5/19/2008	5506.77	14.28	12.60	13.03	5494.08	0.43

NPP = No Product Present      NWP = No Water Present

# Observation Well Fluids Monitoring June 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	6/2/2008	5506.62	12.26	NPP	11.54	5495.08	NPP
	6/16/2008	5506.62	12.26	NPP	11.61	5495.01	NPP
	6/30/2008	5506.62	12.26	NPP	11.74	5494.88	NPP
OW 1+50	6/2/2008	5508.03	14.36	13.61	13.90	5494.36	0.29
	6/16/2008	5508.03	14.36	13.65	14.09	5494.29	0.44
	6/30/2008	5508.03	14.36	13.68	14.26	5494.23	0.58
OW 3+85	6/2/2008	5507.31	15.06	13.03	13.84	5494.12	0.81
	6/16/2008	5507.31	15.06	13.06	13.97	5494.07	0.91
	6/30/2008	5507.31	15.06	13.10	14.08	5494.01	0.98
OW 5+50	6/2/2008	5507.59	13.67	NPP	13.47	5494.12	NPP
	6/16/2008	5507.59	13.67	NPP	13.47	5494.12	NPP
	6/30/2008	5507.59	13.67	NPP	13.48	5494.11	NPP
OW 6+70	6/2/2008	5504.78	14.67	NPP	DRY		NPP
	6/16/2008	5504.78	14.67	NPP	DRY		NPP
	6/30/2008	5504.78	14.67	NPP	DRY		
OW 8+10	6/2/2008	5506.53	15.99	NPP	DRY		NPP
	6/16/2008	5506.53	15.99	NPP	DRY		NPP
	6/30/2008	5506.53	15.99	NPP	DRY		
OW 11+15	6/2/2008	5506.70	16.59	12.27	12.73	5494.34	0.46
	6/16/2008	5506.70	16.59	12.29	12.78	5494.31	0.49
	6/30/2008	5506.70	16.59	12.30	12.90	5494.28	0.60

NPP = No Product Present NWP = No Water Present

# Observation Well Fluids Monitoring June 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 14+ 10	6/2/2008	5508.14	12.96	NPP	DRY		NPP
	6/16/2008	5508.14	12.96	NPP	DRY		NPP
	6/30/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+ 60	6/2/2008	5508.43	15.21	NPP	12.49	5495.94	NPP
	6/16/2008	5508.43	15.21	NPP	12.54	5495.89	NPP
	6/30/2008	5508.43	15.21	NPP	12.61	5495.82	NPP
OW 19+ 50	6/2/2008	5508.03	13.00	NPP	12.11	5495.92	NPP
	6/16/2008	5508.03	13.00	NPP	12.26	5495.77	NPP
	6/30/2008	5508.03	13.00	NPP	12.43	5495.60	NPP
OW 22+ 00	6/2/2008	5506.91	14.16	NPP	11.98	5494.93	NPP
	6/16/2008	5506.91	14.16	NPP	12.07	5494.84	NPP
	6/30/2008	5506.91	14.16	NPP	12.25	5494.66	NPP
OW 23+ 10	6/2/2008	5514.12	18.34	16.24	16.25	5497.88	0.01
	6/16/2008	5514.12	18.34	NPP	16.24	5497.88	NPP
	6/30/2008	5514.12	18.34	NPP	16.26	5497.86	NPP
OW 23+ 90	6/2/2008	5515.18	18.01	NPP	17.11	5498.07	NPP
	6/16/2008	5515.18	18.01	NPP	17.05	5498.13	NPP
	6/30/2008	5515.18	18.01	NPP	17.04	5498.14	NPP
OW 25+ 70	6/2/2008	5509.00	13.98	NPP	10.70	5498.30	NPP
	6/16/2008	5509.00	13.98	NPP	10.68	5498.32	NPP
	6/30/2008	5509.00	13.98	NPP	10.68	5498.32	NPP

NPP = No Product Present NWP = No Water Present

# Collection Well Fluids Monitoring June 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	6/2/2008	5506.68	14.09	NPP	8.48	5498.20	NPP
	6/16/2008	5506.68	14.09	NPP	8.48	5498.20	NPP
	6/30/2008	5506.68	14.09	NPP	8.52	5498.16	NPP
CW 1+50	6/2/2008	5505.13	13.74	NPP	7.10	5498.03	NPP
	6/16/2008	5505.13	13.74	NPP	7.08	5498.05	NPP
	6/30/2008	5505.13	13.74	NPP	7.11	5498.02	NPP
CW 3+85	6/2/2008	5503.87	13.11	NPP	5.88	5497.99	NPP
	6/16/2008	5503.87	13.11	NPP	5.81	5498.06	NPP
	6/30/2008	5503.87	13.11	NPP	5.84	5498.03	NPP
CW 5+50	6/2/2008	5503.76	12.27	NPP	6.44	5497.32	NPP
	6/16/2008	5503.76	12.27	NPP	6.44	5497.32	NPP
	6/30/2008	5503.76	12.27	NPP	6.46	5497.30	NPP
CW 6+70	6/2/2008	5503.84	11.45	NPP	6.79	5497.05	NPP
	6/16/2008	5503.84	11.45	NPP	6.80	5497.04	NPP
	6/30/2008	5503.84	11.45	NPP	6.81	5497.03	NPP
CW 8+10	6/2/2008	5504.02	11.63	NPP	7.64	5496.38	NPP
	6/16/2008	5504.02	11.63	NPP	7.67	5496.35	NPP
	6/30/2008	5504.02	11.63	NPP	7.71	5496.31	NPP

NPP = No Product Present      NWP = No Water Present

# Collection Well Fluids Monitoring June 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 8+45	6/2/2008	5503.80	12.6	7.68	7.7	5496.12	0.02
	6/16/2008	5503.80	12.6	7.67	7.68	5496.13	0.01
	6/30/2008	5503.80	12.6	7.72	7.73	5496.08	0.01
CW 11+15	6/2/2008	5503.95	12.27	NPP	6.04	5497.91	NPP
	6/16/2008	5503.95	12.27	NPP	6.01	5497.94	NPP
	6/30/2008	5503.95	12.27	NPP	6.08	5497.87	NPP
CW 14+10	6/2/2008	5504.39	13.05	NPP	6.41	5497.98	NPP
	6/16/2008	5504.39	13.05	NPP	6.44	5497.95	NPP
	6/30/2008	5504.39	13.05	NPP	6.46	5497.93	NPP
CW 16+60	6/2/2008	5504.32	12.86	NPP	6.39	5497.93	NPP
	6/16/2008	5504.32	12.86	NPP	6.32	5498.00	NPP
	6/30/2008	5504.32	12.86	NPP	6.34	5497.98	NPP
CW 19+50	6/2/2008	5504.52	9.99	NPP	6.48	5498.04	NPP
	6/16/2008	5504.52	9.99	NPP	6.46	5498.06	NPP
	6/30/2008	5504.52	9.99	NPP	6.42	5498.10	NPP
CW 22+00	6/2/2008	5508.04	12.34	NPP	9.27	5498.77	NPP
	6/16/2008	5508.04	12.34	NPP	9.01	5499.03	NPP
	6/30/2008	5508.04	12.34	NPP	9.00	5499.04	NPP

NPP = No Product Present      NWP = No Water Present



# Collection Well Fluids Monitoring June 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 23+ 10	6/2/2008	5510.04	14.65	NPP	10.68	5499.36	NPP
	6/16/2008	5510.04	14.65	NPP	10.65	5499.39	NPP
	6/30/2008	5510.04	14.65	NPP	10.63	5499.41	NPP
CW 23+ 90	6/2/2008	5507.32	11.72	NPP	8.15	5499.17	NPP
	6/16/2008	5507.32	11.72	NPP	8.10	5499.22	NPP
	6/30/2008	5507.32	11.72	NPP	8.07	5499.25	NPP
CW 25+ 95	6/2/2008	5505.90	12.25	NPP	7.15	5498.75	NPP
	6/16/2008	5505.90	12.25	NPP	7.11	5498.79	NPP
	6/30/2008	5505.90	12.25	NPP	7.09	5498.81	NPP

NPP = No Product Present      NWP = No Water Present

# Monitoring Well Fluids Monitoring June 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	6/3/2008	5510.31	22.94	NPP	10.9	5499.41	NPP
	6/16/2008	5510.31	22.94	NPP	10.95	5499.36	NPP
	6/30/2008	5510.31	22.94	NPP	11.05	5499.26	NPP
MW #12	6/3/2008	5501.61	14.98	NPP	9.82	5491.79	NPP
	6/16/2008	5501.61	14.98	NPP	10.04	5491.57	NPP
	6/30/2008	5501.61	14.98	NPP	10.38	5491.23	NPP
MW #20	6/3/2008	5519.90	27.13	20.71	21.30	5499.07	0.59
	6/16/2008	5519.90	27.13	20.70	21.14	5499.11	0.44
	6/30/2008	5519.90	27.13	20.70	21.15	5499.11	0.45
MW #21	6/3/2008	5521.99	30.38	21.76	21.85	5500.21	0.09
	6/16/2008	5521.99	30.38	21.75	21.85	5500.22	0.10
	6/30/2008	5521.99	30.38	21.75	21.86	5500.22	0.11
MW #39	6/3/2008	5520.83	38.34	NPP	25.82	5495.01	NPP
	6/16/2008	5520.83	38.34	NPP	25.88	5494.95	NPP
	6/30/2008	5520.83	38.34	NPP	25.90	5494.93	NPP
MW #45	6/2/2008	5506.36	16.92	NPP	11.68	5494.68	NPP
	6/16/2008	5506.36	16.92	NPP	11.70	5494.66	NPP
	6/30/2008	5506.36	16.92	11.36	11.76	5494.92	0.40

NPP = No Product Present      NWP = No Water Present

# Monitoring Well Fluids Monitoring June 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #46	6/2/2008	5504.65	10.39	NPP	DRY		NPP
	6/16/2008	5504.65	10.39	NPP	DRY		NPP
	6/30/2008	5504.65	10.39	NPP	DRY		NPP
MW #47	6/2/2008	5506.77	14.28	12.49	13.21	5494.14	0.72
	6/16/2008	5506.77	14.28	12.54	13.35	5494.07	0.81
	6/30/2008	5506.77	14.28	12.68	13.42	5493.94	0.74

NPP = No Product Present      NWP = No Water Present

# Observation Well Fluids Monitoring July 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	7/14/2008	5506.62	12.26	NPP	11.79	5494.83	NPP
	7/28/2008	5506.62	12.26	NPP	11.88	5494.74	NPP
OW 1+50	7/14/2008	5508.03	14.36	13.84	14.35	5494.09	0.51
	7/28/2008	5508.03	14.36	13.86	14.34	5494.07	0.48
OW 3+85	7/14/2008	5507.31	15.06	13.35	13.58	5493.91	0.23
	7/28/2008	5507.31	15.06	13.30	13.87	5493.90	0.57
OW 5+50	7/14/2008	5507.59	13.67	NPP	13.49	5494.10	NPP
	7/28/2008	5507.59	13.67	NPP	13.51	5494.08	NPP
OW 6+70	7/14/2008	5504.78	14.67	NPP	DRY		NPP
	7/28/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	7/14/2008	5506.53	15.99	NPP	DRY		NPP
	7/28/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+15	7/14/2008	5506.70	16.59	12.39	12.44	5494.30	0.05
	7/28/2008	5506.70	16.59	12.24	12.71	5494.37	0.47
OW 14+10	7/14/2008	5508.14	12.96	NPP	DRY		NPP
	7/28/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+60	7/14/2008	5508.43	15.21	NPP	12.68	5495.75	NPP
	7/28/2008	5508.43	15.21	NPP	12.79	5495.64	NPP

NPP = No Product Present NWP = No Water Present

# Observation Well Fluids Monitoring July 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 19+ 50	7/14/2008	5508.03	13.00	NPP	12.56	5495.47	NPP
	7/28/2008	5508.03	13.00	NPP	12.73	5495.30	NPP
OW 22+ 00	7/14/2008	5506.91	14.16	NPP	12.36	5494.55	NPP
	7/28/2008	5506.91	14.16	NPP	12.43	5494.48	NPP
OW 23+ 10	7/14/2008	5514.12	18.34	NPP	16.25	5497.87	NPP
	7/28/2008	5514.12	18.34	NPP	16.26	5497.86	NPP
OW 23+ 90	7/14/2008	5515.18	18.01	NPP	17.07	5498.11	NPP
	7/28/2008	5515.18	18.01	NPP	17.04	5498.14	NPP
OW 25+ 70	7/14/2008	5509.00	13.98	NPP	10.67	5498.33	NPP
	7/28/2008	5509.00	13.98	NPP	10.68	5498.32	NPP



# Collection Well Fluids Monitoring July 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	7/14/2008	5506.68	14.09	NPP	8.45	5498.23	NPP
	7/28/2008	5506.68	14.09	NPP	8.53	5498.15	NPP
CW 1+50	7/14/2008	5505.13	13.74	NPP	7.00	5498.13	NPP
	7/28/2008	5505.13	13.74	NPP	7.09	5498.04	NPP
CW 3+85	7/14/2008	5503.87	13.11	NPP	5.72	5498.15	NPP
	7/28/2008	5503.87	13.11	NPP	5.77	5498.10	NPP
CW 5+50	7/14/2008	5503.76	12.27	NPP	6.35	5497.41	NPP
	7/28/2008	5503.76	12.27	NPP	6.37	5497.39	NPP
CW 6+70	7/14/2008	5503.84	11.45	NPP	6.74	5497.10	NPP
	7/28/2008	5503.84	11.45	NPP	6.74	5497.10	NPP
CW 8+10	7/14/2008	5504.02	11.63	NPP	7.62	5496.40	NPP
	7/28/2008	5504.02	11.63	NPP	7.57	5496.45	NPP
CW 8+45	7/14/2008	5503.80	12.6	7.62	7.63	5496.18	0.01
	7/28/2008	5503.80	12.6	7.59	7.6	5496.21	0.01
CW 11+15	7/14/2008	5503.95	12.27	NPP	6.03	5497.92	NPP
	7/28/2008	5503.95	12.27	NPP	6.05	5497.90	NPP
CW 14+10	7/14/2008	5504.39	13.05	NPP	6.36	5498.03	NPP
	7/28/2008	5504.39	13.05	NPP	6.43	5497.96	NPP

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# Collection Well Fluids Monitoring July 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+ 09	7/14/2008	5504.32	12.86	NPP	6.25	5498.07	NPP
	7/28/2008	5504.32	12.86	NPP	6.28	5498.04	NPP
CW 19+ 50	7/14/2008	5504.52	9.99	NPP	5.96	5498.56	NPP
	7/28/2008	5504.52	9.99	NPP	6.00	5498.52	NPP
CW 22+ 00	7/14/2008	5508.04	12.34	NPP	8.99	5499.05	NPP
	7/28/2008	5508.04	12.34	NPP	9.00	5499.04	NPP
CW 23+ 10	7/14/2008	5510.04	14.65	NPP	10.63	5499.41	NPP
	7/28/2008	5510.04	14.65	NPP	10.65	5499.39	NPP
CW 23+ 90	7/14/2008	5507.32	11.72	NPP	8.06	5499.26	NPP
	7/28/2008	5507.32	11.72	NPP	8.08	5499.24	NPP
CW 25+ 95	7/14/2008	5505.90	12.25	NPP	7.09	5498.81	NPP
	7/28/2008	5505.90	12.25	NPP	7.12	5498.78	NPP

NPP = No Product Present      NWP = No Water Present

# Monitoring Well Fluids Monitoring July 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	7/14/2008	5510.31	22.94	NPP	11.09	5499.22	NPP
	7/28/2008	5510.31	22.94	NPP	11.18	5499.13	NPP
MW #12	7/14/2008	5501.61	14.98	NPP	10.56	5491.05	NPP
	7/28/2008	5501.61	14.98	NPP	10.67	5490.94	NPP
MW #20	7/14/2008	5519.90	27.13	20.70	21.11	5499.12	0.41
	7/28/2008	5519.90	27.13	20.71	21.14	5499.10	0.43
MW #21	7/14/2008	5521.99	30.38	21.75	21.85	5500.22	0.10
	7/28/2008	5521.99	30.38	21.76	21.85	5500.21	0.09
MW #39	7/14/2008	5520.83	38.34	NPP	25.89	5494.94	NPP
	7/28/2008	5520.83	38.34	NPP	25.87	5494.96	NPP
MW #45	7/14/2008	5506.36	16.92	NPP	11.70	5494.66	NPP
	7/28/2008	5506.36	16.92	NPP	11.67	5494.69	NPP
MW #46	7/14/2008	5504.65	10.39	NPP	DRY		NPP
	7/28/2008	5504.65	10.39	NPP	DRY		NPP
MW #47	7/14/2008	5506.77	14.28	12.73	13.25	5493.94	0.52
	7/28/2008	5506.77	14.28	12.70	13.31	5493.95	0.61

NPP = No Product Present      NWP = No Water Present

# Observation Well Fluids Monitoring August 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	8/11/2008	5506.62	12.26	NPP	11.19	5495.43	NPP
	8/25/2008	5506.62	12.26	NPP	10.3	5496.32	NPP
OW 1+50	8/11/2008	5508.03	14.36	NPP	12.65	5495.38	NPP
	8/25/2008	5508.03	14.36	NPP	12.19	5495.84	NPP
OW 3+85	8/11/2008	5507.31	15.06	NPP	12.27	5495.04	NPP
	8/25/2008	5507.31	15.06	NPP	11.99	5495.32	NPP
OW 5+50	8/11/2008	5507.59	13.67	NPP	13.52	5494.07	NPP
	8/25/2008	5507.59	13.67	NPP	13.43	5494.16	NPP
OW 6+70	8/11/2008	5504.78	14.67	NPP	DRY		NPP
	8/25/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	8/11/2008	5506.53	15.99	NPP	DRY		NPP
	8/25/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+15	8/11/2008	5506.70	16.59	12.24	12.69	5494.37	0.45
	8/25/2008	5506.70	16.59	12.20	12.45	5494.45	0.25
OW 14+10	8/11/2008	5508.14	12.96	NPP	DRY		NPP
	8/25/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+60	8/11/2008	5508.43	15.21	NPP	12.78	5495.65	NPP
	8/25/2008	5508.43	15.21	NPP	12.50	5495.93	NPP

NPP = No Product Present    NWP = No Water Present

# Observation Well Fluids Monitoring August 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 19+ 50	8/11/2008	5508.03	13.00	NPP	12.89	5495.14	NPP
	8/25/2008	5508.03	13.00	NPP	12.41	5495.62	NPP
OW 22+ 00	8/11/2008	5506.91	14.16	NPP	10.23	5496.68	NPP
	8/25/2008	5506.91	14.16	NPP	10.60	5496.31	NPP
OW 23+ 10	8/11/2008	5514.12	18.34	NPP	15.69	5498.43	NPP
	8/25/2008	5514.12	18.34	NPP	16.09	5498.03	NPP
OW 23+ 90	8/11/2008	5515.18	18.01	NPP	16.69	5498.49	NPP
	8/25/2008	5515.18	18.01	NPP	16.92	5498.26	NPP
OW 25+ 70	8/11/2008	5509.00	13.98	NPP	10.40	5498.60	NPP
	8/25/2008	5509.00	13.98	NPP	10.56	5498.44	NPP

NPP = No Product Present    NWP = No Water Present



# Collection Well Fluids Monitoring August 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	8/11/2008	5506.68	14.09	NPP	8.04	5498.64	NPP
	8/25/2008	5506.68	14.09	NPP	8	5498.68	NPP
CW 1+50	8/11/2008	5505.13	13.74	NPP	6.75	5498.38	NPP
	8/25/2008	5505.13	13.74	NPP	6.56	5498.57	NPP
CW 3+85	8/11/2008	5503.87	13.11	NPP	5.58	5498.29	NPP
	8/25/2008	5503.87	13.11	NPP	5.42	5498.45	NPP
CW 5+50	8/11/2008	5503.76	12.27	NPP	6.26	5497.50	NPP
	8/25/2008	5503.76	12.27	NPP	6.21	5497.55	NPP
CW 6+70	8/11/2008	5503.84	11.45	NPP	6.62	5497.22	NPP
	8/25/2008	5503.84	11.45	NPP	6.58	5497.26	NPP
CW 8+10	8/11/2008	5504.02	11.63	NPP	7.46	5496.56	NPP
	8/25/2008	5504.02	11.63	NPP	7.36	5496.66	NPP
CW 8+45	8/11/2008	5503.80	12.6	7.50	7.51	5496.30	0.01
	8/25/2008	5503.80	12.6	7.43	7.44	5496.37	0.01
CW 11+15	8/11/2008	5503.95	12.27	NPP	6.07	5497.88	NPP
	8/25/2008	5503.95	12.27	NPP	5.94	5498.01	NPP
CW 14+10	8/11/2008	5504.39	13.05	NPP	6.37	5498.02	NPP
	8/25/2008	5504.39	13.05	NPP	6.32	5498.07	NPP

NPP = No Product Present      NWP = No Water Present

# Collection Well Fluids Monitoring August 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+ 60	8/11/2008	5504.32	12.86	NPP	6.17	5498.15	NPP
	8/25/2008	5504.32	12.86	NPP	6.19	5498.13	NPP
CW 19+ 50	8/11/2008	5504.52	9.99	NPP	6.00	5498.52	NPP
	8/25/2008	5504.52	9.99	NPP	6.01	5498.51	NPP
CW 22+ 00	8/11/2008	5508.04	12.34	NPP	8.88	5499.16	NPP
	8/25/2008	5508.04	12.34	NPP	8.83	5499.21	NPP
CW 23+ 10	8/11/2008	5510.04	14.65	NPP	10.53	5499.51	NPP
	8/25/2008	5510.04	14.65	NPP	10.45	5499.59	NPP
CW 23+ 90	8/11/2008	5507.32	11.72	NPP	8.00	5499.32	NPP
	8/25/2008	5507.32	11.72	NPP	7.94	5499.38	NPP
CW 25+ 95	8/11/2008	5505.90	12.25	NPP	7.08	5498.82	NPP
	8/25/2008	5505.90	12.25	NPP	7.07	5498.83	NPP

NPP = No Product Present      NWP = No Water Present

# Monitoring Well Fluids Monitoring August 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	8/11/2008	5510.31	22.94	NPP	10.46	5499.85	NPP
	8/25/2008	5510.31	22.94	NPP	10.46	5499.85	NPP
MW #12	8/11/2008	5501.61	14.98	NPP	10.28	5491.33	NPP
	8/25/2008	5501.61	14.98	NPP	9.50	5492.11	NPP
MW #20	8/11/2008	5519.90	27.13	20.67	21.08	5499.15	0.41
	8/25/2008	5519.90	27.13	20.61	20.91	5499.23	0.30
MW #21	8/11/2008	5521.99	30.38	21.52	21.68	5500.44	0.16
	8/25/2008	5521.99	30.38	21.34	21.54	5500.61	0.20
MW #39	8/11/2008	5520.83	38.34	NPP	25.85	5494.98	NPP
	8/25/2008	5520.83	38.34	NPP	25.87	5494.96	NPP
MW #45	8/11/2008	5506.36	16.92	NPP	11.64	5494.72	NPP
	8/25/2008	5506.36	16.92	NPP	11.54	5494.82	NPP
MW #46	8/11/2008	5504.65	10.39	NPP	9.36	5495.29	NPP
	8/25/2008	5504.65	10.39	NPP	9.83	5494.82	NPP
MW #47	8/11/2008	5506.77	14.28	NPP	11.67	5495.10	NPP
	8/25/2008	5506.77	14.28	NPP	11.46	5495.31	NPP

NPP = No Product Present      NWP = No Water Present

# Observation Well Fluids Monitoring Sept. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	9/8/2008	5506.62	12.26	NPP	10.56	5496.06	NPP
	9/22/2008	5506.62	12.26	NPP	10.79	5495.83	NPP
OW 1+50	9/8/2008	5508.03	14.36	12.69	12.74	5495.33	0.05
	9/22/2008	5508.03	14.36	NPP	12.68	5495.35	NPP
OW 3+85	9/8/2008	5507.31	15.06	NPP	12.15	5495.16	NPP
	9/22/2008	5507.31	15.06	NPP	12.27	5495.04	NPP
OW 5+50	9/8/2008	5507.59	13.67	NPP	13.25	5494.34	NPP
	9/22/2008	5507.59	13.67	NPP	13.51	5494.08	NPP
OW 6+70	9/8/2008	5504.78	14.67	NPP	DRY		NPP
	9/22/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	9/8/2008	5506.53	15.99	NPP	DRY		NPP
	9/22/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+15	9/8/2008	5506.70	16.59	12.22	12.4	5494.44	0.18
	9/22/2008	5506.70	16.59	12.35	12.38	5494.34	0.03
OW 14+10	9/8/2008	5508.14	12.96	NPP	DRY		NPP
	9/22/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+60	9/8/2008	5508.43	15.21	NPP	12.46	5495.97	NPP
	9/22/2008	5508.43	15.21	NPP	12.34	5496.09	NPP

NPP = No Product Present    NWP = No Water Present

# Observation Well Fluids Monitoring Sept. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 19+ 50	9/8/2008	5508.03	13.00	NPP	12.03	5496.00	NPP
	9/22/2008	5508.03	13.00	NPP	11.52	5496.51	NPP
OW 22+ 00	9/8/2008	5506.91	14.16	NPP	10.98	5495.93	NPP
	9/22/2008	5506.91	14.16	NPP	11.29	5495.62	NPP
OW 23+ 10	9/8/2008	5514.12	18.34	NPP	16.03	5498.09	NPP
	9/22/2008	5514.12	18.34	NPP	16.20	5497.92	NPP
OW 23+ 90	9/8/2008	5515.18	18.01	NPP	16.86	5498.32	NPP
	9/22/2008	5515.18	18.01	NPP	17.02	5498.16	NPP
OW 25+ 70	9/8/2008	5509.00	13.98	NPP	10.53	5498.47	NPP
	9/22/2008	5509.00	13.98	NPP	11.35	5497.65	NPP

NPP = No Product Present    NWP = No Water Present



# Collection Well Fluids Monitoring Sept. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	9/8/2008	5506.68	14.09	NPP	8.19	5498.49	NPP
	9/22/2008	5506.68	14.09	NPP	8.27	5498.41	NPP
CW 1+50	9/8/2008	5505.13	13.74	NPP	6.76	5498.37	NPP
	9/22/2008	5505.13	13.74	NPP	6.78	5498.35	NPP
CW 3+85	9/8/2008	5503.87	13.11	NPP	5.54	5498.33	NPP
	9/22/2008	5503.87	13.11	NPP	5.53	5498.34	NPP
CW 5+50	9/8/2008	5503.76	12.27	NPP	6.27	5497.49	NPP
	9/22/2008	5503.76	12.27	NPP	6.28	5497.48	NPP
CW 6+70	9/8/2008	5503.84	11.45	NPP	6.63	5497.21	NPP
	9/22/2008	5503.84	11.45	NPP	6.66	5497.18	NPP
CW 8+10	9/8/2008	5504.02	11.63	NPP	7.38	5496.64	NPP
	9/22/2008	5504.02	11.63	NPP	7.41	5496.61	NPP
CW 8+45	9/8/2008	5503.80	12.6	7.45	7.46	5496.35	0.01
	9/22/2008	5503.80	12.6	7.49	7.5	5496.31	0.01
CW 11+15	9/8/2008	5503.95	12.27	NPP	5.99	5497.96	NPP
	9/22/2008	5503.95	12.27	NPP	5.97	5497.98	NPP
CW 14+10	9/8/2008	5504.39	13.05	NPP	6.39	5498.00	NPP
	9/22/2008	5504.39	13.05	NPP	6.43	5497.96	NPP

NPP = No Product Present      NWP = No Water Present

# Collection Well Fluids Monitoring Sept. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+ 60	9/8/2008	5504.32	12.86	NPP	6.24	5498.08	NPP
	9/22/2008	5504.32	12.86	NPP	6.27	5498.05	NPP
CW 19+ 50	9/8/2008	5504.52	9.99	NPP	6.08	5498.44	NPP
	9/22/2008	5504.52	9.99	NPP	6.14	5498.38	NPP
CW 22+ 00	9/8/2008	5508.04	12.34	NPP	8.87	5499.17	NPP
	9/22/2008	5508.04	12.34	NPP	8.91	5499.13	NPP
CW 23+ 10	9/8/2008	5510.04	14.65	NPP	10.57	5499.47	NPP
	9/22/2008	5510.04	14.65	NPP	10.59	5499.45	NPP
CW 23+ 90	9/8/2008	5507.32	11.72	NPP	8.03	5499.29	NPP
	9/22/2008	5507.32	11.72	NPP	8.08	5499.24	NPP
CW 25+ 95	9/8/2008	5505.90	12.25	NPP	7.11	5498.79	NPP
	9/22/2008	5505.90	12.25	NPP	7.13	5498.77	NPP

NPP = No Product Present      NWP = No Water Present

# Monitoring Well Fluids Monitoring Sept. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	9/8/2008	5510.31	22.94	NPP	10.7	5499.61	NPP
	9/22/2008	5510.31	22.94	NPP	10.89	5499.42	NPP
MW #12	9/8/2008	5501.61	14.98	NPP	9.40	5492.21	NPP
	9/22/2008	5501.61	14.98	NPP	9.73	5491.88	NPP
MW #20	9/8/2008	5519.90	27.13	20.61	20.89	5499.23	0.28
	9/22/2008	5519.90	27.13	20.61	20.95	5499.22	0.34
MW #21	9/8/2008	5521.99	30.38	21.45	21.6	5500.51	0.15
	9/22/2008	5521.99	30.38	21.57	21.73	5500.39	0.16
MW #39	9/8/2008	5520.83	38.34	NPP	25.80	5495.03	NPP
	9/22/2008	5520.83	38.34	NPP	25.82	5495.01	NPP
MW #45	9/8/2008	5506.36	16.92	NPP	11.57	5494.79	NPP
	9/22/2008	5506.36	16.92	NPP	11.65	5494.71	NPP
MW #46	9/8/2008	5504.65	10.39	NPP	9.83	5494.82	NPP
	9/22/2008	5504.65	10.39	NPP	DRY		NPP
MW #47	9/8/2008	5506.77	14.28	NPP	11.63	5495.14	NPP
	9/22/2008	5506.77	14.28	NPP	11.75	5495.02	NPP

NPP = No Product Present      NWP = No Water Present

# Observation Well Fluids Monitoring Oct. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	10/6/2008	5506.62	12.26	NPP	10.97	5495.65	NPP
	10/20/2008	5506.62	12.26	NPP	11.07	5495.55	NPP
OW 1+50	10/6/2008	5508.03	14.36	12.85	12.86	5495.18	0.01
	10/20/2008	5508.03	14.36	12.91	13.04	5495.09	0.13
OW 3+85	10/6/2008	5507.31	15.06	NPP	12.42	5494.89	NPP
	10/20/2008	5507.31	15.06	NPP	12.51	5494.80	NPP
OW 5+50	10/6/2008	5507.59	13.67	NPP	13.18	5494.41	NPP
	10/20/2008	5507.59	13.67	NPP	13.04	5494.55	NPP
OW 6+70	10/6/2008	5504.78	14.67	NPP	DRY		NPP
	10/20/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	10/6/2008	5506.53	15.99	NPP	DRY		NPP
	10/20/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+15	10/6/2008	5506.70	16.59	12.25	12.32	5494.44	0.07
	10/20/2008	5506.70	16.59	12.34	12.37	5494.35	0.03
OW 14+10	10/6/2008	5508.14	12.96	NPP	DRY		NPP
	10/20/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+60	10/6/2008	5508.14	12.96	NPP	DRY		NPP
	10/20/2008	5508.43	15.21	NPP	12.49	5495.94	NPP

NPP = No Product Present NWP = No Water Present

# Observation Well Fluids Monitoring Oct. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 19+ 50	10/6/2008	5508.03	13.00	NPP	11.63	5496.40	NPP
	10/20/2008	5508.03	13.00	NPP	11.89	5496.14	NPP
OW 22+ 00	10/6/2008	5506.91	14.16	NPP	11.45	5495.46	NPP
	10/20/2008	5506.91	14.16	NPP	11.44	5495.47	NPP
OW 23+ 10	10/6/2008	5514.12	18.34	NPP	16.17	5497.95	NPP
	10/20/2008	5514.12	18.34	NPP	16.23	5497.89	NPP
OW 23+ 90	10/6/2008	5515.18	18.01	NPP	17.05	5498.13	NPP
	10/20/2008	5515.18	18.01	NPP	17.07	5498.11	NPP
OW 25+ 70	10/6/2008	5509.00	13.98	NPP	10.68	5498.32	NPP
	10/20/2008	5509.00	13.98	NPP	10.70	5498.30	NPP

NPP = No Product Present NWP = No Water Present



# Collection Well Fluids Monitoring Oct. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	10/6/2008	5506.68	14.09	NPP	8.24	5498.44	NPP
	10/20/2008	5506.68	14.09	NPP	8.3	5498.38	NPP
CW 1+50	10/6/2008	5505.13	13.74	NPP	6.85	5498.28	NPP
	10/20/2008	5505.13	13.74	NPP	6.83	5498.30	NPP
CW 3+85	10/6/2008	5503.87	13.11	NPP	5.62	5498.25	NPP
	10/20/2008	5503.87	13.11	NPP	5.63	5498.24	NPP
CW 5+50	10/6/2008	5503.76	12.27	NPP	6.31	5497.45	NPP
	10/20/2008	5503.76	12.27	NPP	6.31	5497.45	NPP
CW 6+70	10/6/2008	5503.84	11.45	NPP	6.69	5497.15	NPP
	10/20/2008	5503.84	11.45	NPP	6.69	5497.15	NPP
CW 8+10	10/6/2008	5504.02	11.63	NPP	7.43	5496.59	NPP
	10/20/2008	5504.02	11.63	NPP	7.47	5496.55	NPP
CW 8+45	10/6/2008	5503.80	12.6	7.53	7.54	5496.27	0.01
	10/20/2008	5503.80	12.6	7.58	7.59	5496.22	0.01
CW 11+15	10/6/2008	5503.95	12.27	NPP	6.00	5497.95	NPP
	10/20/2008	5503.95	12.27	NPP	5.93	5498.02	NPP
CW 14+10	10/6/2008	5504.39	13.05	NPP	6.47	5497.92	NPP
	10/20/2008	5504.39	13.05	NPP	6.42	5497.97	NPP

NPP = No Product Present      NWP = No Water Present

# Collection Well Fluids Monitoring Oct. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+ 60	10/6/2008	5504.32	12.86	NPP	6.3	5498.02	NPP
	10/20/2008	5504.32	12.86	NPP	6.28	5498.04	NPP
CW 19+ 50	10/6/2008	5504.52	9.99	NPP	6.07	5498.45	NPP
	10/20/2008	5504.52	9.99	NPP	6.23	5498.29	NPP
CW 22+ 00	10/6/2008	5508.04	12.34	NPP	8.92	5499.12	NPP
	10/20/2008	5508.04	12.34	NPP	8.93	5499.11	NPP
CW 23+ 10	10/6/2008	5510.04	14.65	NPP	10.6	5499.44	NPP
	10/20/2008	5510.04	14.65	NPP	10.58	5499.46	NPP
CW 23+ 90	10/6/2008	5507.32	11.72	NPP	8.06	5499.26	NPP
	10/20/2008	5507.32	11.72	NPP	8.07	5499.25	NPP
CW 25+ 95	10/6/2008	5505.90	12.25	NPP	7.13	5498.77	NPP
	10/20/2008	5505.90	12.25	NPP	7.13	5498.77	NPP

NPP = No Product Present      NWP = No Water Present

# Monitoring Well Fluids Monitoring Oct. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	10/6/2008	5510.31	22.94	NPP	10.83	5499.48	NPP
	10/20/2008	5510.31	22.94	NPP	10.96	5499.35	NPP
MW #12	10/6/2008	5501.61	14.98	NPP	10.91	5490.70	NPP
	10/20/2008	5501.61	14.98	NPP	9.89	5491.72	NPP
MW #20	10/6/2008	5519.90	27.13	20.60	20.92	5499.24	0.32
	10/20/2008	5519.90	27.13	20.60	20.91	5499.24	0.31
MW #21	10/6/2008	5521.99	30.38	21.61	21.75	5500.35	0.14
	10/20/2008	5521.99	30.38	21.61	21.73	5500.36	0.12
MW #39	10/6/2008	5520.83	38.34	NPP	25.83	5495.00	NPP
	10/20/2008	5520.83	38.34	NPP	25.85	5494.98	NPP
MW #45	10/6/2008	5506.36	16.92	NPP	11.64	5494.72	NPP
	10/20/2008	5506.36	16.92	NPP	11.61	5494.75	NPP
MW #46	10/6/2008	5504.65	10.39	NPP	DRY		NPP
	10/20/2008	5504.65	10.39	NPP	DRY		NPP
MW #47	10/6/2008	5506.77	14.28	NPP	11.87	5494.90	NPP
	10/20/2008	5506.77	14.28	NPP	11.96	5494.81	NPP

NPP = No Product Present      NWP = No Water Present

# Observation Well Fluids Monitoring Nov. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	11/3/2008	5506.62	12.26	NPP	11.22	5495.40	NPP
	11/17/2008	5506.62	12.26	NPP	11.33	5495.29	NPP
OW 1+50	11/3/2008	5508.03	14.36	13.06	13.14	5494.95	0.08
	11/17/2008	5508.03	14.36	13.13	13.32	5494.86	0.19
OW 3+85	11/3/2008	5507.31	15.06	NPP	12.58	5494.73	NPP
	11/17/2008	5507.31	15.06	NPP	12.66	5494.65	NPP
OW 5+50	11/3/2008	5507.59	13.67	NPP	13.06	5494.53	NPP
	11/17/2008	5507.59	13.67	NPP	13.09	5494.50	NPP
OW 6+70	11/3/2008	5504.78	14.67	NPP	DRY		NPP
	11/17/2008	5504.78	14.67	NPP	DRY		NPP
OW 8+10	11/3/2008	5506.53	15.99	NPP	DRY		NPP
	11/17/2008	5506.53	15.99	NPP	DRY		NPP
OW 11+15	11/3/2008	5506.70	16.59	12.24	12.26	5494.46	0.02
	11/17/2008	5506.70	16.59	12.35	12.37	5494.35	0.02
OW 14+10	11/3/2008	5508.14	12.96	NPP	DRY		NPP
	11/17/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+60	11/3/2008	5508.43	15.21	NPP	12.52	5495.91	NPP
	11/17/2008	5508.43	15.21	NPP	12.63	5495.80	NPP

NPP = No Product Present NWP = No Water Present

# Observation Well Fluids Monitoring Nov. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 19+ 50	11/3/2008	5508.03	13.00	NPP	12.12	5495.91	NPP
	11/17/2008	5508.03	13.00	NPP	12.43	5495.60	NPP
OW 22+ 00	11/3/2008	5506.91	14.16	NPP	11.49	5495.42	NPP
	11/17/2008	5506.91	14.16	NPP	11.68	5495.23	NPP
OW 23+ 10	11/3/2008	5514.12	18.34	NPP	16.23	5497.89	NPP
	11/17/2008	5514.12	18.34	NPP	16.25	5497.87	NPP
OW 23+ 90	11/3/2008	5515.18	18.01	NPP	17.05	5498.13	NPP
	11/17/2008	5515.18	18.01	NPP	17.10	5498.08	NPP
OW 25+ 70	11/3/2008	5509.00	13.98	NPP	10.81	5498.19	NPP
	11/17/2008	5509.00	13.98	NPP	10.73	5498.27	NPP

NPP = No Product Present    NWP = No Water Present



# Collection Well Fluids Monitoring Nov. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	11/3/2008	5506.68	14.09	NPP	8.4	5498.28	NPP
	11/17/2008	5506.68	14.09	NPP	8.51	5498.17	NPP
CW 1+50	11/3/2008	5505.13	13.74	NPP	6.91	5498.22	NPP
	11/17/2008	5505.13	13.74	NPP	6.96	5498.17	NPP
CW 3+85	11/3/2008	5503.87	13.11	NPP	5.67	5498.20	NPP
	11/17/2008	5503.87	13.11	NPP	5.69	5498.18	NPP
CW 5+50	11/3/2008	5503.76	12.27	NPP	6.37	5497.39	NPP
	11/17/2008	5503.76	12.27	NPP	6.41	5497.35	NPP
CW 6+70	11/3/2008	5503.84	11.45	NPP	6.72	5497.12	NPP
	11/17/2008	5503.84	11.45	NPP	6.77	5497.07	NPP
CW 8+10	11/3/2008	5504.02	11.63	NPP	7.47	5496.55	NPP
	11/17/2008	5504.02	11.63	NPP	7.61	5496.41	NPP
CW 8+45	11/3/2008	5503.80	12.6	7.58	7.61	5496.21	0.03
	11/17/2008	5503.80	12.6	7.76	7.79	5496.03	0.03
CW 11+15	11/3/2008	5503.95	12.27	NPP	5.92	5498.03	NPP
	11/17/2008	5503.95	12.27	NPP	5.96	5497.99	NPP
CW 14+10	11/3/2008	5504.39	13.05	NPP	6.43	5497.96	NPP
	11/17/2008	5504.39	13.05	NPP	6.54	5497.85	NPP

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# Collection Well Fluids Monitoring Nov. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+ 60	11/3/2008	5504.32	12.86	NPP	6.3	5498.02	NPP
	11/17/2008	5504.32	12.86	NPP	6.33	5497.99	NPP
CW 19+ 50	11/3/2008	5504.52	9.99	NPP	6.31	5498.21	NPP
	11/17/2008	5504.52	9.99	NPP	6.41	5498.11	NPP
CW 22+ 00	11/3/2008	5508.04	12.34	NPP	8.90	5499.14	NPP
	11/17/2008	5508.04	12.34	NPP	8.96	5499.08	NPP
CW 23+ 10	11/3/2008	5510.04	14.65	NPP	10.57	5499.47	NPP
	11/17/2008	5510.04	14.65	NPP	10.62	5499.42	NPP
CW 23+ 90	11/3/2008	5507.32	11.72	NPP	8.06	5499.26	NPP
	11/17/2008	5507.32	11.72	NPP	8.10	5499.22	NPP
CW 25+ 95	11/3/2008	5505.90	12.25	NPP	7.12	5498.78	NPP
	11/17/2008	5505.90	12.25	NPP	7.16	5498.74	NPP

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# Monitoring Well Fluids Monitoring Nov. 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	11/3/2008	5510.31	22.94	NPP	11.16	5499.15	NPP
	11/17/2008	5510.31	22.94	NPP	11.29	5499.02	NPP
MW #12	11/3/2008	5501.61	14.98	NPP	9.93	5491.68	NPP
	11/17/2008	5501.61	14.98	NPP	9.96	5491.65	NPP
MW #20	11/3/2008	5519.90	27.13	20.57	20.82	5499.28	0.25
	11/17/2008	5519.90	27.13	20.59	20.89	5499.25	0.30
MW #21	11/3/2008	5521.99	30.38	21.60	21.7	5500.37	0.10
	11/17/2008	5521.99	30.38	21.65	21.77	5500.32	0.12
MW #39	11/3/2008	5520.83	38.34	NPP	25.78	5495.05	NPP
	11/17/2008	5520.83	38.34	NPP	25.82	5495.01	NPP
MW #45	11/3/2008	5506.36	16.92	NPP	11.57	5494.79	NPP
	11/17/2008	5506.36	16.92	NPP	11.71	5494.65	NPP
MW #46	11/3/2008	5504.65	10.39	NPP	DRY		NPP
	11/17/2008	5504.65	10.39	NPP	DRY		NPP
MW #47	11/3/2008	5506.77	14.28	NPP	12.04	5494.73	NPP
	11/17/2008	5506.77	14.28	NPP	12.09	5494.68	NPP

NPP = No Product Present      NWP = No Water Present

# Observation Well Fluids Monitoring December 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 0+60	12/1/2008	5506.62	12.26	NPP	11.45	5495.17	NPP
	12/15/2008	5506.62	12.26	NPP	11.49	5495.13	NPP
	12/29/2008	5506.62	12.26	NPP	11.57	5495.05	NPP
OW 1+50	12/1/2008	5508.03	14.36	13.23	13.44	5494.76	0.21
	12/15/2008	5508.03	14.36	13.29	13.48	5494.70	0.19
	12/29/2008	5508.03	14.36	13.32	13.57	5494.66	0.25
OW 3+85	12/1/2008	5507.31	15.06	NPP	12.67	5494.64	NPP
	12/15/2008	5507.31	15.06	NPP	12.84	5494.47	NPP
	12/29/2008	5507.31	15.06	NPP	12.81	5494.50	NPP
OW 5+50	12/1/2008	5507.59	13.67	NPP	13.13	5494.46	NPP
	12/15/2008	5507.59	13.67	NPP	13.18	5494.41	NPP
	12/29/2008	5507.59	13.67	NPP	13.23	5494.36	NPP
OW 6+70	12/1/2008	5504.78	14.67	NPP	DRY		NPP
	12/15/2008	5504.78	14.67	NPP	DRY		NPP
	12/29/2008	5504.78	14.67	NPP	DRY		
OW 8+10	12/1/2008	5506.53	15.99	NPP	DRY		NPP
	12/15/2008	5506.53	15.99	NPP	DRY		NPP
	12/29/2008	5506.53	15.99	NPP	DRY		
OW 11+15	12/1/2008	5506.70	16.59	12.33	12.35	5494.37	0.02
	12/15/2008	5506.70	16.59	12.36	12.37	5494.34	0.01
	12/29/2008	5506.70	16.59	12.45	12.46	5494.25	0.01

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# Observation Well Fluids Monitoring December 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 14+ 10	12/1/2008	5508.14	12.96	NPP	DRY		NPP
	12/15/2008	5508.14	12.96	NPP	DRY		NPP
	12/29/2008	5508.14	12.96	NPP	DRY		NPP
OW 16+ 60	12/1/2008	5508.43	15.21	NPP	12.66	5495.77	NPP
	12/15/2008	5508.43	15.21	NPP	12.73	5495.70	NPP
	12/29/2008	5508.43	15.21	NPP	12.78	5495.65	NPP
OW 19+ 50	12/1/2008	5508.03	13.00	NPP	12.59	5495.44	NPP
	12/15/2008	5508.03	13.00	NPP	12.75	5495.28	NPP
	12/29/2008	5508.03	13.00	NPP	12.97	5495.06	NPP
OW 22+ 00	12/1/2008	5506.91	14.16	NPP	11.57	5495.34	NPP
	12/15/2008	5506.91	14.16	NPP	11.62	5495.29	NPP
	12/29/2008	5506.91	14.16	NPP	10.39	5496.52	NPP
OW 23+ 10	12/1/2008	5514.12	18.34	NPP	16.25	5497.87	NPP
	12/15/2008	5514.12	18.34	NPP	16.26	5497.86	NPP
	12/29/2008	5514.12	18.34	NPP	16.23	5497.89	NPP
OW 23+ 90	12/1/2008	5515.18	18.01	NPP	17.1	5498.08	NPP
	12/15/2008	5515.18	18.01	NPP	17.08	5498.10	NPP
	12/29/2008	5515.18	18.01	NPP	17.08	5498.10	NPP
OW 25+ 70	12/1/2008	5509.00	13.98	NPP	10.74	5498.26	NPP
	12/15/2008	5509.00	13.98	NPP	10.74	5498.26	NPP
	12/29/2008	5509.00	13.98	NPP	10.73	5498.27	NPP

NPP = No Product Present NWP = No Water Present



# Collection Well Fluids Monitoring December 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 0+60	12/1/2008	5506.68	14.09	NPP	8.46	5498.22	NPP
	12/15/2008	5506.68	14.09	NPP	8.5	5498.18	NPP
	12/29/2008	5506.68	14.09	NPP	8.35	5498.33	NPP
CW 1+50	12/1/2008	5505.13	13.74	NPP	6.95	5498.18	NPP
	12/15/2008	5505.13	13.74	NPP	6.96	5498.17	NPP
	12/29/2008	5505.13	13.74	NPP	6.92	5498.21	NPP
CW 3+85	12/1/2008	5503.87	13.11	NPP	5.70	5498.17	NPP
	12/15/2008	5503.87	13.11	NPP	5.72	5498.15	NPP
	12/29/2008	5503.87	13.11	NPP	5.70	5498.17	NPP
CW 5+50	12/1/2008	5503.76	12.27	NPP	6.39	5497.37	NPP
	12/15/2008	5503.76	12.27	NPP	6.41	5497.35	NPP
	12/29/2008	5503.76	12.27	NPP	6.41	5497.35	NPP
CW 6+70	12/1/2008	5503.84	11.45	NPP	6.74	5497.10	NPP
	12/15/2008	5503.84	11.45	NPP	6.75	5497.09	NPP
	12/29/2008	5503.84	11.45	NPP	6.77	5497.07	NPP
CW 8+10	12/1/2008	5504.02	11.63	NPP	7.61	5496.41	NPP
	12/15/2008	5504.02	11.63	NPP	7.62	5496.40	NPP
	12/29/2008	5504.02	11.63	NPP	7.68	5496.34	NPP

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# Collection Well Fluids Monitoring December 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 8+45	12/1/2008	5503.80	12.6	7.74	7.77	5496.05	0.03
	12/15/2008	5503.80	12.6	7.76	7.79	5496.03	0.03
	12/29/2008	5503.80	12.6	7.85	7.88	5495.94	0.03
CW 11+15	12/1/2008	5503.95	12.27	NPP	5.93	5498.02	NPP
	12/15/2008	5503.95	12.27	NPP	5.95	5498.00	NPP
	12/29/2008	5503.95	12.27	NPP	5.96	5497.99	NPP
CW 14+10	12/1/2008	5504.39	13.05	NPP	6.49	5497.90	NPP
	12/15/2008	5504.39	13.05	NPP	6.52	5497.87	NPP
	12/29/2008	5504.39	13.05	NPP	6.54	5497.85	NPP
CW 16+60	12/1/2008	5504.32	12.86	NPP	6.31	5498.01	NPP
	12/15/2008	5504.32	12.86	NPP	6.32	5498.00	NPP
	12/29/2008	5504.32	12.86	NPP	6.33	5497.99	NPP
CW 19+50	12/1/2008	5504.52	9.99	NPP	6.37	5498.15	NPP
	12/15/2008	5504.52	9.99	NPP	6.37	5498.15	NPP
	12/29/2008	5504.52	9.99	NPP	6.40	5498.12	NPP
CW 22+00	12/1/2008	5508.04	12.34	NPP	8.96	5499.08	NPP
	12/15/2008	5508.04	12.34	NPP	8.98	5499.06	NPP
	12/29/2008	5508.04	12.34	NPP	8.89	5499.15	NPP

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# Collection Well Fluids Monitoring December 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 23+ 10	12/1/2008	5510.04	14.65	NPP	10.63	5499.41	NPP
	12/15/2008	5510.04	14.65	NPP	10.66	5499.38	NPP
	12/29/2008	5510.04	14.65	NPP	10.65	5499.39	NPP
CW 23+ 90	12/1/2008	5507.32	11.72	NPP	8.12	5499.20	NPP
	12/15/2008	5507.32	11.72	NPP	8.13	5499.19	NPP
	12/29/2008	5507.32	11.72	NPP	8.13	5499.19	NPP
CW 25+ 95	12/1/2008	5505.90	12.25	NPP	7.16	5498.74	NPP
	12/15/2008	5505.90	12.25	NPP	7.17	5498.73	NPP
	12/29/2008	5505.90	12.25	NPP	7.17	5498.73	NPP

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# Monitoring Well Fluids Monitoring December 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #11	12/1/2008	5510.31	22.94	NPP	11.36	5498.95	NPP
	12/15/2008	5510.31	22.94	NPP	11.41	5498.90	NPP
	12/29/2008	5510.31	22.94	NPP	11.43	5498.88	NPP
MW #12	12/1/2008	5501.61	14.98	NPP	9.99	5491.62	NPP
	12/15/2008	5501.61	14.98	NPP	10.04	5491.57	NPP
	12/29/2008	5501.61	14.98	NPP	10.05	5491.56	NPP
MW #20	12/1/2008	5519.90	27.13	20.58	20.88	5499.26	0.30
	12/15/2008	5519.90	27.13	20.60	20.90	5499.24	0.30
	12/29/2008	5519.90	27.13	20.61	20.93	5499.23	0.32
MW #21	12/1/2008	5521.99	30.38	21.69	21.8	5500.28	0.11
	12/15/2008	5521.99	30.38	21.74	21.85	5500.23	0.11
	12/29/2008	5521.99	30.38	21.77	21.85	5500.20	0.08
MW #39	12/1/2008	5520.83	38.34	NPP	25.78	5495.05	NPP
	12/15/2008	5520.83	38.34	NPP	25.68	5495.15	NPP
	12/29/2008	5520.83	38.34	NPP	25.75	5495.08	NPP
MW #45	12/1/2008	5506.36	16.92	NPP	11.66	5494.70	NPP
	12/15/2008	5506.36	16.92	NPP	11.70	5494.66	NPP
	12/29/2008	5506.36	16.92	NPP	11.81	5494.55	NPP

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# Monitoring Well Fluids Monitoring December 2008

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW #46	12/3/2007	5504.65	10.39	NPP	DRY		NPP
	12/17/2007	5504.65	10.39	NPP	DRY		NPP
	12/31/2007	5504.65	10.39	NPP	DRY		NPP
MW #47	12/3/2007	5506.77	14.28	NPP	12.17	5494.60	NPP
	12/17/2007	5506.77	14.28	NPP	12.22	5494.55	NPP
	12/31/2007	5506.77	14.28	NPP	12.23	5494.54	NPP

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# North Barrier Wall

## Collection Wells Groundwater Analysis & Field Data

April 2007 - EPA Method 8021B : August 2007 & April/August 2008 - EPA Method 8260B										Field Data			
WQCC 20 NMAC 6.2.3.103 40CFR141.61 (Benzene and Ethylbenzene)	Date Sampled	Benzene	0.005 (mg/L)	0.75 (mg/L)	0.70 (mg/L)	0.62 (mg/L)		EPA Method 8015B					
								TPH Screening Guidelines Table 2a	mmhos/cm	6.0-9.0	Farenheit	1000 (mg/l)	
									1.72 (mg/L)	E.C.	pH	Temp.	TDS
CW 0+60	Aug-08	0.047	<0.001	0.0066	<0.002	<0.001	MTBE	DRO	1173	6.96	68.1	827	
	Apr-08	0.18	<0.005	0.049	0.026	0.052		5.3	1122	6.79	51.8	805	
	Aug-07	0.27	<0.01	0.05	<0.03	<0.01		2.0	1347	7.04	69.0	NS <sup>2</sup>	
	Apr-07	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	
CW 25+95	Aug-08	0.0018	0.0011	0.0023	<0.002	<0.001		<1.0	1312	7.07	66.2	931	
	Apr-08	0.043	0.085	0.013	0.11	<0.002		<1.0	1004	6.92	55.7	714	
	Aug-07	0.02	<0.001	<0.001	<0.003	0.0016		<1.0	1401	7.06	70.7	NS <sup>2</sup>	
	Apr-07	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	NR <sup>2</sup>	

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample  
 NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan  
 NS<sup>3</sup> = Sample Inadvertently not Analyzed this Sampling Event

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

Groundwater Analysis & Field Data

Observation Wells	April 2007 - EPA Method 8021B										Field Data			
	August 2007 & April/August 2008 - EPA Method 8260B					EPA Method 8015B					mmhos/cm	pH	Fahrenheit	1000 (mg/l)
	WQCC 20 NMAC 6.2 3103 40CFR141.61 (Benzene and Ethylbenzene)	Benzene (mg/L)	Toluene (mg/L)	Ethylben (mg/L)	Xylene (mg/L)	MTBE	DRO	(mg/L)	TPH Screening Guidelines Table 24 1.72 (mg/L)	GRO				
OW 0+60	Date Sampled	Benzene	Toluene	Ethylben	Xylene	MTBE	DRO	GRO	TPH Screening Guidelines Table 24 1.72 (mg/L)	GRO	E.C.	pH	Temp.	TDS
	Aug-08	<0.001	<0.001	0.0066	0.019	<0.001	6.4	2.3		2.3	1577	6.91	69.2	1129
	Apr-08	<0.01	<0.01	0.018	0.048	<0.01	360.0	6.7		6.7	1727	6.78	56.2	1257
	Aug-07	0.011	<0.005	0.085	0.13	<0.005	5.7	NR <sup>2</sup>		NR <sup>2</sup>	1986	7.05	75.5	NS <sup>2</sup>
OW 1+50	Apr-07	<0.02	0.058	0.097	0.15	<0.025	NS <sup>2</sup>	NR <sup>2</sup>		NR <sup>2</sup>	1991	6.95	54.6	1495
	Aug-08	0.076	<0.01	0.95	6.7	<0.01	2.9	24.0		24.0	1562	6.91	69.6	1116
	Apr-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>		NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
OW 3+85	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-08	0.099	<0.01	0.95	3.2	<0.01	12.0	14.0		14.0	2835	6.87	67.1	2142
	Apr-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>		NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
OW 5+50	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Apr-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
OW 6+70	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Apr-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
OW 6+70	Apr-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Apr-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>		NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NR <sup>2</sup>		NR <sup>2</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>

NS<sup>1</sup> = Well is Dry or Not Enough Water to Sample - No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Analyzed this Sampling Event

NR<sup>1</sup> = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

# North Barrier Wall

## Groundwater Analysis & Field Data

### Observation Wells

April 2007 - EPA Method 8021B : August 2007 & April/August 2008 - EPA Method 8260B																	EPA Method 8015B				Field Data			
WQCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene)	Date Sampled	Benzene	Toluene	Ethylben	0.75 (mg/L)	0.70 (mg/L)	0.62 (mg/L)	MTBE	DRO	GRO	mmhos/cm	6.0-9.0	Fahrenheit	1000 (mg/l)										
		TPH Screening Guidelines Table 2a 1.72 (mg/L)																						
OW 8+10	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	E.C.	pH	Temp.	TDS										
	Apr-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>										
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NR <sup>2</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>										
	Apr-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NR <sup>2</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>										
OW 11+15	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Apr-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Aug-07	1.0	<0.02	0.026	<0.06	2.2	<0.06	2.2	42.0	NR <sup>2</sup>	2199	7.03	69.7	NS <sup>2</sup>										
	Apr-07	0.84	<0.02	<0.02	<0.04	1.9	<0.04	1.9	NS <sup>2</sup>	NR <sup>2</sup>	2264	6.83	54.5	1715										
OW 14+10	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>										
	Apr-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>										
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NR <sup>2</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>										
	Apr-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NR <sup>2</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>										
OW 16+60	Aug-08	1.2	<0.01	1.1	0.98	3.9	0.98	3.9	7.7	17.0	2544	6.91	71.9	1900										
	Apr-08	2.3	<0.05	1.4	1.3	4.5	1.3	4.5	34.0	21.0	2474	6.78	61.1	1865										
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>2</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>										
	Apr-07	3.1	<0.05	2	7.2	9	7.2	9	NS <sup>2</sup>	NR <sup>2</sup>	2457	6.78	60.6	1887										
OW 19+50	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>										
	Apr-08	<0.002	<0.002	<0.002	<0.006	0.14	<0.006	0.14	8.8	<0.25	3937	6.79	57.8	3112										
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NR <sup>2</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>										
	Apr-07	0.0019	<0.001	<0.001	<0.002	0.27	<0.002	0.27	NS <sup>2</sup>	NR <sup>2</sup>	4204	6.69	52.7	3403										

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Groundwater Analysis & Field Data

April 2007 - EPA Method 8021B : August 2007 & April/August 2008 - EPA Method 8260B										EPA Method 8015B		Field Data			
WQCC-20 NMAC 6.2:3103 40CFR141.61 (Benzene and Ethylbenzene)	0.005 (mg/L)	0.75 (mg/L)	0.70 (mg/L)	0.62 (mg/L)	MTBE	DRO	GRO	mmhos/cm	6.0-9.0	Fahrenheit	1000 (mg/l)				
												TPH Screening Guidelines Table 2a 1-72 (mg/L)			
Date Sampled	Benzene	Toluene	Ethylben	Xylene				E.C.	pH	Temp.	TDS				
OW 22+00	Aug-08	<0.001	<0.001	<0.001	<0.002	0.044	3.1	0.078	3101	6.85	68.5	2367			
	Apr-08	<0.01	<0.01	<0.01	<0.03	1.2	5.4	0.51	3905	6.8	55.8	3082			
	Aug-07	<0.002	<0.005	<0.005	<0.015	2.3	13.0	NR²	3062	7.02	70.8	NS²			
	Apr-07	<<0.005	<0.005	<0.005	<0.01	2.4	NS²	NR²	3044	67.0	52.3	2388			
OW 23+10	Aug-08	<0.001	<0.001	<0.001	<0.002	0.0097	13.0	1.2	1648	6.9	67.7	1187			
	Apr-08	<0.001	<0.001	<0.001	<0.003	0.025	11.0	0.94	1689	6.8	58.6	1235			
	Aug-07	<0.001	<0.001	<0.001	<0.003	0.033	6.2	NR²	2050	7.0	68.3	NS²			
	Apr-07	<0.001	0.007	0.003	0.009	0.04	NS²	NR²	1898	67.3	54.3	1423			
OW 23+90	Aug-08	<0.001	<0.001	<0.001	<0.002	<0.001	<1.0	<0.05	1477	6.99	65.3	1055			
	Apr-08	<0.001	<0.001	<0.001	<0.003	<0.001	<1.0	<0.05	1470	6.78	57.9	1065			
	Aug-07	<0.001	<0.001	<0.001	<0.003	0.0012	<1.0	NR²	1728	6.98	65.5	NS²			
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	NS²	NR²	1695	6.96	56.2	1252			
OW 25+70	Aug-08	<0.001	<0.001	<0.001	<0.002	<0.001	<1.0	<0.05	1623	7.03	68.5	1167			
	Apr-08	0.0027	0.0026	<0.001	<0.003	<0.001	<1.0	0.14	1249	6.86	53.6	898			
	Aug-07	<0.001	<0.001	<0.001	<0.003	<0.001	<1.0	NR²	1246	7.05	75.4	NS²			
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	NS²	NR²	1517	6.889	53	1116			

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NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon  
 NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

## Monitoring Wells Groundwater Analysis &amp; Field Data

Monitoring Wells	Groundwater Analysis & Field Data									
	April 2007 - EPA Method 8021B August 2007 & April/August 2008 - EPA Method 8260B					EPA Method 8015B		Field Data		
	WQCC 20 NMAC 6.2:3103 40CFR141.61 (Benzene and Ethylbenzene)	0.005 (mg/L)	0.75 (mg/L)	0.70 (mg/L)	0.62 (mg/L)	mg/L MTBE	mg/L DRO	mmhos/cm	6.0-9.0	Fahrenheit
	Date Sampled	mg/L Benzene	mg/L Toluene	mg/L Ethylben	mg/L Xylene	mg/L MTBE	mg/L DRO	mmhos/cm E.C.	pH	°F Temp.
MW - #11	Aug-08	0.0038	<0.001	0.0022	<0.0015	0.019	9.6	2226	7.02	66.7
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	0.97	<0.01	<0.01	<0.015	0.022	NR <sup>2</sup>	2109	7.01	66.9
	Apr-07	3.9	<0.01	0.038	0.16	<0.025	NR <sup>2</sup>	1944	6.93	55.0
MW - #12	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	775	7.10	62.6
	Apr-08	<0.001	<0.001	<0.001	<0.003	<0.0015	<1.0	707	6.84	51.1
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	NR <sup>2</sup>	987	7.05	68.1
	Apr-07	<0.001	<0.001	<0.001	<0.002	<0.0025	NR <sup>2</sup>	599	6.92	51.8
MW - #20	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
MW - #21	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No SampleNS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring PlanNS<sup>3</sup> = Sample Inadvertently not Analyzed this Sampling EventNR<sup>1</sup>= No Sample Required - Well Contains Separate Phase HydrocarbonNR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions



# North Barrier Wall

## Monitoring Wells Groundwater Analysis & Field Data

Monitoring Wells											
EPA Method 8021B & 8260B							EPA Method 8015B		Field Data		
WQCC 20NMAC 6.2.3.103	Date Sampled	mg/L Benzene	mg/L Toluene	mg/L Ethylben	mg/L Xylene	mg/L MTBE	Guidelines Table 1-72	mmhos/cm E.C.	6.0-9.0 pH	Farenheit Temp.	1000 (mg/l)
MW #38	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	mg/L DRO	mmhos/cm		°F	mg/L TDS
	Apr-08	<0.001	<0.001	<0.001	<0.003	0.0024	<1.0	1306	7.00	62.5	932
	Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001	1.2	1439	6.85	59.4	1040
	Apr-07	<0.001	<0.001	<0.001	<0.002	0.004	NR <sup>2</sup>	1481	6.99	64.7	NS <sup>2</sup>
MW #39	Aug-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NR <sup>2</sup>	1864	6.91	59.7	1375
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Apr-07	0.28	<0.01	0.56	0.38	<0.025	NS <sup>2</sup>	5439	6.94	62.1	4497
MW #45	Aug-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Apr-08	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Aug-07	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>	NS <sup>2</sup>
	Apr-07	0.14	<0.05	0.12	0.49	3.2	NS <sup>2</sup>	2201	6.85	54.1	1663
MW #46	Aug-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Apr-08	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Aug-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
	Apr-07	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>	NS <sup>1</sup>
MW #47	Aug-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-08	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Aug-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>
	Apr-07	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>	NR <sup>1</sup>

NS<sup>1</sup>= Well is Dry or Not Enough Water to Sample- No Sample

NS<sup>2</sup> = Not Sampled due to approved Facility-Wide Monitoring Plan

NS<sup>3</sup> = Sample Inadvertently not Analyzed this Sampling Event

NR<sup>1</sup>= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR<sup>2</sup> = No Sample Required per OCD and NMED pre-2007 Conditions

## Section 16.0 Chemical Analytical Program

# Hall Environmental Analysis Laboratory

## QUALITY ASSURANCE PLAN

Effective Date: January 31st 2009

Revision 9.0

[www.hallenvironmental.com](http://www.hallenvironmental.com)

Control Number: 0000082

Approved By:

  
Nancy McDuffie  
Laboratory Manager

2-5-09  
Date

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**Appendix C TCEQ Accreditation**

Full list of approved analytes, methods, analytical techniques and fields of testing  
**Reserved, available upon request**

**Appendix D ADHS Accreditation**

Full list of approved analytes, methods, analytical techniques and fields of testing  
**Reserved, available upon request**

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**Reserved, available upon request**

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**Reserved, available upon request**

**Appendix G Chain of Custody Record**

**Reserved, available upon request**

**Appendix H HEAL Forms**

Analyst Ethics and Data Integrity Agreement  
IDOC Certificate  
ADOCP Certificate  
Training Forms  
**Reserved, available upon request**

### 3.0 Introduction

#### Purpose of Document

The purpose of this Quality Assurance Plan is to formally document the quality assurance policies and procedures of Hall Environmental Analysis Laboratory, Inc. (HEAL), for the benefit of its employees, clients, and accrediting organizations. HEAL continually implements all aspects of this plan as an essential and integral part of laboratory operations in order to ensure that high quality data is produced in an efficient and effective manner.

#### Objectives

The objective of HEAL is to achieve and maintain excellence in environmental testing. This is accomplished by developing, incorporating and documenting the procedures and policies specified by each of our accrediting authorities and outlined in this plan. A laboratory staff that is analytically competent, well qualified, and highly trained carries out these activities. An experienced management team, knowledgeable in their area of expertise, monitors them. Finally, a comprehensive quality assurance program governs laboratory practices and ensures that the analytical results are valid, defensible, reproducible, reconstructable and of the highest quality.

HEAL establishes and thoroughly documents its activities to ensure that all data generated and processed will be scientifically valid and of known and documented quality. Routine laboratory activities are detailed in method specific standard operating procedures (SOP). All data reported meets the applicable requirements for the specific method that is referenced, ORELAP, TCEQ, EPA, client specific requirements and/or State Bureaus. In the event that these requirements are ever in contention with each other, it is HEAL's policy to always follow the most prudent requirement available. For specific method requirements refer to HEAL's Standard Operating Procedures (SOP's), EPA methods, Standard Methods 20<sup>th</sup> edition, ASTM methods or state specific methods.

HEAL management ensures that this document is correct in terms of required accuracy, data reproducibility, and that the procedures contain proper quality control measures. HEAL management additionally ensures that all equipment is reliable, well maintained and appropriately calibrated. The procedures and practices of the laboratory are geared towards not only strictly following our regulatory requirements but also allowing the flexibility to conform to client specific specifications. Meticulous records are maintained for all samples and their respective analyses so that results are well documented and defensible in a court of law.

The HEAL Quality Assurance/Quality Control Officer (QA/QCO) and upper management are responsible for supervising and administering this quality assurance program, and ensuring each individual is responsible for its proper implementation. All HEAL management remains committed to the encouragement of excellence in analytical testing and will continue to provide the necessary resources and environment conducive to its achievement.

## Policies

Understanding that quality cannot be mandated, it is the policy of this laboratory to provide an environment that encourages all staff members to take pride in the quality of their work. In addition to furnishing proper equipment and supplies, HEAL stresses the importance of continued training and professional development. Further, HEAL recognizes the time required for data interpretation. Therefore, no analyst should feel pressure to sacrifice data quality for data quantity. Each staff member must perform with the highest level of integrity and professional competence, always being alert to problems that could compromise the quality of their technical work.

Management and senior personnel supervise analysts closely in all operations. Under no circumstance is the willful act or fraudulent manipulation of analytical data condoned. Such acts must be reported immediately to HEAL management. Reported acts will be assessed on an individual basis and resulting actions could result in dismissal. The laboratory staff is encouraged to speak with lab managers or senior management if they feel that there are any undue commercial, financial, or other pressures, which might adversely affect the quality of their work; or in the event that they suspect that data quality has been compromised in any way. HEAL's Quality Assurance/Quality Control Officer is available if any analyst and/or manager wishes to anonymously report any suspected or known breaches in data integrity.

All proprietary rights and client information at HEAL (including national security concerns) are considered confidential. No information will be given out without the express verbal or written permission of the client. All reports generated will be held in the strictest of confidence.

This is a controlled document. Each copy is assigned a unique tracking number and when released to a client or accrediting agency the QA/QCO keeps the tracking number on file. This document is reviewed on an annual basis to ensure that it is valid and representative of current practices at HEAL.

## 4.0 Organization and Responsibility

### Company

HEAL is accredited in accordance with the 2003 NELAC standard (see NELAC accredited analysis list in the appendix), through ORELAP and TCEQ and by the Arizona Department of Health Services. Additionally, HEAL is qualified as defined under the State of New Mexico Water Quality Control Commission regulations and the New Mexico State Drinking Water Bureau. HEAL is a locally owned small business that was established in 1991. HEAL is a full service environmental analysis laboratory with analytical capabilities that include both organic and inorganic methodologies and has performed analyses of soil, water, air as well as various other matrices for many sites in the region. HEAL's client base includes local, state and federal agencies, private consultants, commercial industries as well as individual homeowners. HEAL has performed as a subcontractor to the state of New Mexico and to the New Mexico Department of Transportation. HEAL has been acclaimed by its customers as producing quality results and as being adaptive to client-specific needs.

The laboratory is divided into an organic section, and an inorganic section. Each section has a designated manager/technical director. The technical directors report directly to the laboratory manager, who oversees all operations.

### Certifications

ORELAP – NELAC Oregon Primary accrediting authority.

TCEQ – NELAC Texas Secondary accrediting authority.

The Arizona Department of Health Services

The New Mexico Drinking Water Bureau

See appendix B-E for copies of current licenses and licensed parameters, or refer to our current list of certifications online at [www.hallenvironmental.com](http://www.hallenvironmental.com).

### Personnel

HEAL management ensures the competence of all who operate equipment, perform environmental tests, evaluate results, and sign test reports. Personnel performing specific tasks shall be qualified on the basis of appropriate education, training, experience and /or demonstrated skills.

All personnel shall be responsible for complying with HEALs quality assurance/quality control requirements that pertain to their technical function. Each technical staff member must have a combination of experience and education to adequately demonstrate specific knowledge of their

particular function and a general knowledge of laboratory operations, test methods, quality assurance/quality control procedures and records management. All employees training certificates and diplomas are kept on file with demonstrations of capability for each method they perform. An Organizational Chart can be found in Appendix A.

### **Laboratory Director**

The Laboratory Director is responsible for overall technical direction and business leadership of HEAL. The Laboratory Manager, the Project Manager and Quality Assurance/Quality Control Officer report directly to the Laboratory Director. Someone with a minimum of 7 years of directly related experience and a bachelor's degree in a scientific or engineering discipline should fill this position.

### **Laboratory Manager/Lead Technical Director**

The Laboratory Manager shall exercise day-to-day supervision of laboratory operations for the appropriate fields of accreditation and reporting of results. The Laboratory Manager shall be experienced in the fields of accreditation for which the laboratory is approved or seeking accreditation. The Laboratory Manager shall certify that personnel with appropriate educational and/or technical background perform all tests for which HEAL is accredited. Such certification shall be documented.

The Laboratory Manager shall monitor standards of performance in quality control and quality assurance and monitor the validity of the analyses performed and data generated at HEAL to assure reliable data.

The Laboratory Manager is responsible for the daily operations of the laboratory. The Laboratory Manager is the lead technical director of the laboratory and in conjunction with the section technical directors is responsible for coordinating activities within the laboratory with the overall goal of efficiently producing high quality data within a reasonable time frame.

In events where employee scheduling or current workload is such that new work cannot be incorporated, without missing hold times, the Laboratory Manager has authority to modify employee scheduling, re-schedule projects or, when appropriate, allocate the work to approved subcontracting laboratories.

Additionally, the laboratory manager reviews and approves new analytical procedures and methods, and performs a final review of most analytical results. The Laboratory Manager provides technical support to both customers and HEAL staff.

The Laboratory Manager also observes the performance of supervisors to ensure good laboratory practices and proper techniques are being taught and utilized, assisting in overall quality control implementation, and strategic planning for the future of the company. Other duties include assisting in establishing laboratory policies which lead to the fulfillment of requirements for various certification programs, assuring that all Quality



Assurance and Quality Control documents are reviewed and approved, and assisting in conducting Quality Assurance Audits.

The laboratory manager addresses questions or complaints that cannot be answered by the section managers.

The Laboratory Manager shall have a bachelor's degree in a chemical, environmental, biological sciences, physical sciences or engineering field, and at least five years of experience in the environmental analysis of representative inorganic and organic analytes for which the laboratory seeks or maintains accreditation.

### **Quality Assurance Quality Control Officer**

The Quality Assurance/Quality Control Officer (QA/QCO) serves as the focal point for QA/QC and shall be responsible for the oversight and/or review of quality control data. The QA/QCO functions independently from laboratory operations and shall be empowered to halt unsatisfactory work and/or prevent the reporting of results generated from an out-of-control measurement system. The QA/QCO shall objectively evaluate data and perform assessments without any outside/managerial influence. The QA/QCO shall have direct access to the highest level of management at which decisions are made on laboratory policy and/or resources. The QA/QCO shall notify laboratory management of deficiencies in the quality system in periodic, independent reports.

The QA/QCO shall have general knowledge of the analytical test methods, for which data review is performed, have documented training and/or experience in QA/QC procedures and in the laboratory's quality system. The QA/QCO will have a minimum of a BS in a scientific or related field and a minimum of three years of related experience.

The QA/QCO shall schedule and conduct internal audits as per the Internal Audit SOP at least annually, monitor and trend Corrective Action Reports as per the Data Validation SOP, periodically review control charts for out of control conditions and initiate any appropriate corrective actions.

The QA/QCO shall oversee the analysis of proficiency testing in accordance with our standards and monitor any corrective actions issued as a result of this testing.

The QA/QCO reviews all standard operating procedures and statements of work in order to assure their accuracy and compliance to method and regulatory requirements.

The QA/QCO shall be responsible for maintaining and updating this quality manual.

### **Business/Project Manager**

The role of the business/project manager is to act as a liaison between HEAL and our clients. The project manager reviews reports, updates clients on the status of projects in-house, prepares quotations for new work, and is responsible for HEALs marketing effort.

All new work is assessed by the project manager and reviewed with the other managers so as to not exceed the laboratories capacity. In events where employee scheduling or current workload is such that new work cannot be incorporated without missing hold times, the Project Manager has authority to re-schedule projects.

It is also the duty of the project manager to work with the Laboratory Manager and QA/QCO to insure that before new work is undertaken the resources required and accreditations requested are available to meet the client's specific needs.

Additionally, the Project Manager can initiate the review of the need for new analytical procedures and methods, and performs a final review of some analytical results. The Project Manager provides technical support to customers. Someone with a minimum of 2 years of directly related experience and a bachelor's degree in a scientific or engineering discipline should fill this position.

### **Section Manager/Technical Directors**

The Section Manager/Technical Directors are full-time members of the staff at HEAL who exercise day-to-day supervision of laboratory operations for the appropriate fields of accreditation and reporting of results for their department within HEAL. A Technical Director's duties shall include, but not be limited to, monitoring standards of performance in quality control and quality assurance; monitoring the validity of the analyses performed and the data generated in their sections to ensure reliable data, overseeing training and supervising departmental staff, schedule incoming work for their sections and monitor laboratory personnel to ensure that proper procedures and techniques are being utilized. They supervise and implement new Quality Control procedures as directed by the QA/QCO, update and maintain quality control records including, but not limited to, training forms, IDOCs, ADOCPs, MDLs and evaluate laboratory personnel in their Quality Control activities. In addition technical directors are responsible for upholding the spirit and intent of HEAL's data integrity procedures.

They are the technical director of the associated section and review analytical data to acknowledge that data meets all criteria set forth for good Quality Assurance practices. Someone with a minimum of 2 years of experience in the environmental analysis of representative analytes for which HEAL seeks or maintains accreditation and a bachelor's degree in a scientific or related discipline should fill this position.

### **Health and Safety / Chemical Hygiene Officer**

Refer to the most recent version of the Health and Safety and Chemical Hygiene Plans for the rolls, responsibilities and basic requirements of the Health and Safety Officer (H&SO) and the Chemical Hygiene Officer (CHO). These jobs can be executed by the same employee.

## **Chemist I, II and III**

Chemists are responsible for the analysis of various sample matrices including, but not limited to, solid, aqueous, and air as well as the generation of high quality data in accordance with the HEAL SOPs and QA/QC guidelines in a reasonable time as prescribed by standard turnaround schedules or as directed by the Section Manager or Laboratory Manager.

Chemists are responsible for making sure all data generated is entered in the database in the correct manner and the raw data is reviewed, signed and delivered to the appropriate peer for review. A Chemist reports daily to the section manager and will inform them as to material needs of the section specifically pertaining to the analyses performed by the chemist. Additional duties may include preparation of samples for analysis, maintenance of lab instruments or equipment, cleaning and providing technical assistance to lower level laboratory staff.

The senior chemist in the section may be asked to perform supervisory duties as related to operational aspects of the section. The chemist may perform all duties of a lab technician.

The position of Chemist is a full or part time hourly position and is divided into three levels, Chemist I, II, and III. All employees hired into a Chemist position at HEAL must begin as a Chemist I and remain there at a minimum of three months regardless of their education and experience. Chemist I must have a minimum of an AA in a related field or equivalent experience (equivalent experience means years of related experience can be substituted for the education requirement). A Chemist I is responsible for analysis, instrument operation and data reduction. Chemist II must have a minimum of an AA in a related field or equivalent experience and must have documented and demonstrated aptitude to perform all functions of a Chemist II. A Chemist II is responsible for the full analysis of their test methods, routine instrument maintenance, purchase of consumables as dictated by their Technical Director, advanced data reduction and basic data review. Chemist II may also assist Chemist III in method development and as dictated by their Technical Director may be responsible for the review and/or revision of their method specific SOPs. Chemist III must have Bachelors degree or equivalent experience and must have documented and demonstrated aptitude to perform all functions of a Chemist III. Chemist III are responsible for all tasks completed by a Chemist I and II as well as advanced data review, non-routine instrument maintenance, assisting their technical director in basic supervisory duties and method development.

## **Laboratory Technician**

A laboratory technician is responsible for providing support in the form of sample preparation, basic analysis, general laboratory maintenance, glassware washing, chemical inventories and sample kit preparation. This position can be filled by someone without the education and experience necessary to obtain a position as a chemist.

## **Sample Control Manager**

The sample control manager is responsible for receiving samples and reviewing the sample login information after it has been entered into the computer. The sample control manager also checks the samples against the chain-of-custody for any sample and/or labeling discrepancies prior to distribution.

The sample control manager is responsible for sending out samples to the sub-contractors along with the review and shipping of field sampling bottle kits. The sample control manager acts as a liaison between the laboratory and field sampling crew to ensure that the appropriate analytical test is assigned. If a discrepancy is noted the sample control manager or sample custodian will contact the customer to resolve any questions or problems. The sample control manager is an integral part the customer service team.

This position should be filled by someone with a high school diploma and a minimum of 2 years of related experience and can also be filled by a senior manager.

## **Sample Custodians**

Sample Custodians work directly under the Sample Control Manager. They are responsible for sample intake into the laboratory and into the LIMS. Sample Custodians take orders from our clients and prepare appropriate bottle kits to meet the client's needs. Sample Custodians work directly with the clients in properly labeling and identifying samples as well as properly filling out legal COCs. When necessary, Sample Custodians contact clients to resolve any questions or problems associated with their samples. Sample Custodians are responsible for distributing samples throughout the laboratory and are responsible for notifying analysts of special circumstances such as short holding times or improper sample preservation upon receipt.

## **Delegations in the Absence of Key Personnel**

Planned absences shall be preceded by notification to the Laboratory Manager. The appropriate staff members shall be informed of the absence. In the case of unplanned absences, the organizational superior shall either assume the responsibilities and duties or delegate the responsibilities and duties to another appropriately qualified employee.

In the event that the Laboratory Manager is absent for a period of time exceeding fifteen consecutive calendar days, another full-time staff member meeting the basic qualifications and competent to temporarily perform this function will be designated. If this absence exceeds thirty-five consecutive calendar days, HEAL will notify ORELAP in writing of the absence and the pertinent qualifications of the temporary laboratory manager.

## **Laboratory Personnel Qualification and Training**

All personnel joining HEAL shall undergo orientation and training. During this period the new personnel shall be introduced to the organization and their responsibilities, as well as

the policies and procedures of the company. They shall also undergo on the job training and shall work with trained staff. They will be shown required tasks and be observed while performing them.

When utilizing staff undergoing training, appropriate supervision shall be dictated and overseen by the appropriate section technical director. Prior to analyzing client samples, a new employee, or an employee new to a procedure, must meet the following basic requirements. The SOP and Method for the analysis must be read and signed by the employee indicating that they read, understood and intend to comply with the requirements of the documents. The employee must undergo documented training. Training is conducted by a senior analyst familiar with the procedure and overseen by the section Technical Director. This training is documented by any means deemed appropriate by the trainer and section Technical Director, and kept on file in the employees file located in the QA/QCO's office. The employee must perform a successful Initial Demonstration of Proficiency (IDOC). See Appendix H for the training documents and checklists utilized at HEAL to ensure that all of these requirements are met. Once all of the above requirements are met it is incumbent upon the section Technical Director to determine at which point the employee can begin to perform the test unsupervised. A Certification to Complete Work Unsupervised (see Appendix H) is then filled out by the employee and technical director.

All IDOCs shall be documented through the use of the certification form which can be found in Appendix H. IDOCs are performed by analyzing four Laboratory Control Spikes (LCSs). Using the results of the LCSs the mean recovery is calculated in the appropriate reporting units and the standard deviations of the population sample (n-1) (in the same units) as well as the relative percent difference for each parameter of interest. When it is not possible or pertinent to determine mean and standard deviations HEAL assesses performance against established and documented criteria dictated in the method SOP. The mean and standard deviation are compared to the corresponding acceptance criteria for precision and accuracy in the test method (if applicable) or in laboratory-generated acceptance criteria. In the event that the HEAL SOP or test method fail to establish the pass/fail criteria the default limits of  $\pm 20\%$  for calculated recovery and  $<20\%$  relative percent difference based on the standard deviation will be utilized. If all parameters meet the acceptance criteria, the IDOC is successfully completed. If any one of the parameters do not meet the acceptance criteria, the performance is unacceptable for that parameter and the analyst must either locate and correct the source of the problem and repeat the test for all parameters of interest or repeat the test for all parameters that failed to meet criteria. Repeat failure, however, confirms a general problem with the measurement system. If this occurs the source of the problem must be identified and the test repeated for all parameters of interest.

New employees that do not have prior analysis experience will not be allowed to perform analysis until they have demonstrated attention to detail with minimal errors in the assigned tasks. To ensure a sustained level of quality performance among staff members, continuing demonstration of capability shall be performed at least once a year. These are as an Annual Documentation of Continued Proficiency (ADOCP).

At least once per year an ADOCP must be completed by: the acceptable performance of a blind sample (this is typically done using a PT sample but can be a single blind sample to the analyst), by performing another IDOC, or by summarizing the data of four consecutive

laboratory control samples with acceptable levels of precision and accuracy (these limits are those currently listed in the LIMS for an LCS using the indicated test method.) ADOCPs are documented using a standard form and are kept on file in each analysts employee folder.

Each new employee shall be provided with data integrity training as a formal part of their new employee orientation. Each new employee will sign an ethics and data integrity agreement to ensure that they understand that data quality is our main objective. Every HEAL employee recognizes that although turn around time is important, quality is put above any pressure to complete the task expediently. Analysts are not compensated for passing QC parameters nor are incentives given for the quantity of work produced. Data Integrity and Ethics training are performed on an annual basis in order to remind all employees of HEAL's policy on data quality. Employees are required to understand that any infractions of the laboratory data integrity procedures will result in a detailed investigation that could lead to very serious consequences including immediate termination, debarment or civil/criminal prosecution.

Training for each member of HEALs technical staff is further established and maintained through documentation that each employee has read, understood, and is using the latest version of this Quality Assurance Manual. Training courses or workshops on specific equipment, analytical techniques or laboratory procedures are documented through attendance sheets, certificates of attendance, training forms, or quizzes. This training documentation is located in either analyst specific employee folders in the QA/QCO Office or in the current years group training folder, also located in the QA/QCO Office. On the front of all methods, SOPs and procedures for HEAL there is a signoff sheet that is signed by all pertinent employees, indicating that they have read, understood and agreed to perform the most recent version of the document.



## **5.0 Receipt and Handling of Samples**

### **Sampling**

#### **Procedures**

HEAL does not provide field sampling for any projects. Sample kits are prepared and provided for clients upon request. The sample kits contain the appropriate sampling containers (with a preservative when necessary), labels, blue ice, a cooler, chain-of-custody forms, plastic bags, bubble wrap, and any special sampling instructions. Sample kits are reviewed prior to shipment for accuracy and completeness.

#### **Containers**

Containers which are sent out for sampling are purchased by HEAL from a commercial source. Glass containers are certified "EPA Cleaned" QA level 1. Plastic containers are certified clean when required. These containers are received with a Certificate of Analysis verifying that the containers have been cleaned according to the EPA wash procedure. Containers are used once and discarded. If the samples are collected and stored in inappropriate containers the laboratory may not be able to accurately quantify the amount of the desired components. In this case re-sampling may be required.

#### **Preservation**

If sampling for an analyte(s) requires preservation, the sample custodians fortify the containers prior to shipment to the field, or provide the preservative for the sampler to add in the field. The required preservative is introduced into the vials in uniform amounts and done so rapidly to minimize the risk of contamination. Vials that contain a preservative are labeled appropriately. If the samples are stored with inappropriate preservatives the laboratory may not be able to accurately quantify the amount of the desired components. In this case re-sampling may be required.

Refer to the current Login SOP and/or the current price book for detailed sample receipt and handling procedures, appropriate preservation and holding time requirements.

### **Sample Custody**

#### **Chain-of-Custody Form**

A Chain-of-Custody (CoC) form is used to provide a record of sample chronology from the field to receipt at the laboratory. HEALs CoC contains the client's name, address, phone and fax numbers, the project name and number, the project manager's name,

and the field sampler's name. It also identifies the date and time of sample collection, sample matrix, field sample ID number, number/volume of sample containers, sample temperature upon receipt, and any sample preservative information.

There is also a space to record the HEAL ID number assigned to samples after they are received. Next to the sample information is a space for the client to indicate the desired analyses to be performed. There is a section for the client to indicate the data package level as well as any accreditation requirements. Finally, there is a section to track the actual custody of the samples. The custody section contains lines for signatures, dates and times when samples are relinquished and received. The CoC form also includes a space to record special sample related instructions, sampling anomalies, time constraints, and any sample disposal considerations.

It is paramount that all CoCs arrive at HEAL complete and accurate so that the samples can be processed and allocated for testing in a timely and efficient manor. A sample chain-of-custody form can be found in Appendix G or on line at [www.hallenvironmental.com](http://www.hallenvironmental.com).

### **Receiving Samples**

Samples are received by authorized HEAL personnel. Upon arrival, the CoC is compared to the respective samples. After the samples and CoC have been determined to be complete and accurate, the sampler signs over the CoC. The HEAL staff member in turn signs the chain-of-custody, also noting the current date, time and sample temperature. This relinquishes custody of the samples from the sampler and delegates sample custody to HEAL. The third (pink) copy of the CoC form is given to the person who has relinquished custody of the samples.

### **Logging in Samples and Storage**

Standard Operating Procedures have been established for the receiving and tracking of all samples (refer to the current HEAL Login SOP). These procedures ensure that samples are received and properly logged into the laboratory, and that all associated documentation, including chain of custody forms, are complete and consistent with the samples received. Each sample set is given a unique HEAL tracking ID number. Individual sample locations within a defined sample set are given a unique sample ID suffix-number. Labels with the HEAL numbers, and tests requested, are generated and placed on their respective containers. The pH of preserved, non-volatile samples is checked and noted if out of compliance. Due to the nature of the samples, the pHs of volatile samples are checked after analysis. Samples are reviewed prior to being distributed for analysis.

Samples are distributed for analysis based upon the requested tests. In the event that sample volume is limited and different departments at HEAL are required to share the

sample, volatile work takes precedence and will always be analyzed first before the sample is sent to any other department for analysis.

Each project (sample set) is entered into the Laboratory Information Management System (LIMS) with a unique ID that will be identified on every container. The ID tag includes the Lab ID, Client ID, date and time of collection, and the analysis/analyses to be performed. The LIMS continually updates throughout the lab. Therefore, at any time, an analyst or manager may inquire about a project and/or samples status. For more information about the login procedures, refer to the Sample Login SOP.

### **Disposal of Samples**

Samples are held at HEAL for a minimum of thirty days and then transferred to the HEAL warehouse for disposal. Analytical results are used to characterize their respective sample contamination level(s) so that the proper disposal can be performed. These wastes will be disposed of according to their hazard as well as their type and level of contamination. Refer to the Hall Environmental Analysis Laboratory Chemical Hygiene Plan and current Sample Disposal SOP for details regarding waste disposal.

Waste drums are provided by an outside agency. These drums are removed by the outside agency and disposed of in a proper manner.

The wastes that are determined to be non-hazardous are disposed of as non-hazardous waste in accordance with the Chemical Hygiene Plan and Sample Disposal SOP.

## 6.0 Analytical Procedures

All analytical methods used at HEAL incorporate necessary and sufficient Quality Assurance and Quality Control practices. A Standard Operating Procedure (SOP) is used for each method to provide the necessary criteria to yield acceptable results. These procedures are reviewed at least annually and revised as necessary and are attached as a pdf file in the Laboratory Information Management System (LIMS) for easy access by each analyst. The sample is often consumed or altered during the analytical process. Therefore, it is important that each step in the analytical process be correctly followed in order to yield valid data.

When unforeseen problems arise, the analyst, technical director, and, when necessary, laboratory manager meet to discuss the factors involved. The analytical requirements are evaluated and a suitable corrective action or resolution is established. The client is notified in the case narrative with the final report or before, if the validity of their result is in question.

### List of Procedures Used

Typically, the procedures used by HEAL are EPA approved methodologies or 20<sup>th</sup> edition Standard Methods. However, proprietary methods for client specific samples, are sometimes used. The following tables list EPA and Standard Methods Method numbers with their corresponding analytes and/or instrument classification.

#### Methods Utilized at HEAL

Methodology	Title of Method
120.1	"Conductance(Specific Conductance, $\mu$ ohms at 25 ° C)"
180.1	"Turbidity (Nephelometric)"
200.2	"Sample Preparation Procedure For Spectrochemical Determination of Total Recoverable Elements"
200.7	"Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry"
245.1	"Mercury (Manual Cold Vapor Technique)"
300.0	"Determination of Inorganic Anions by Ion Chromatography"
413.2	"Oil and Grease"
418.1	"Petroleum Hydrocarbons (Spectrophotometric, Infrared)"
420.3	"Phenolics (Spectrophotometric, MBTH With Distillation)"
504.1	"EDB, DBCP and 123TCP in Water by Microextraction and Gas Chromatography"

505	"Analysis of Organohalide Pesticides and Commercial Polychlorinated Biphenyl (PCB) Products in Water by Microextraction and Gas Chromatography"
515.1	"Determination of Chlorinated Acids in Water by Gas Chromatography with an Electron Capture Detector"
524.2	"Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry"
531.1	"Measurement of N-Methylcarbamoyloximes and N-Methylcarbamates in Water by Direct Aqueous Injection HPLC with Post Column Derivatization"
547	"Determination of Glyphosate in Drinking Water by Direct-Aqueous Injection HPLC, Post-Column Derivatization, and Fluorescence Detection"
552.1	"Determination of Haloacetic Acids and Dalapon in Drinking Water by Ion-Exchange Liquid-Solid Extraction and Gas Chromatography with an Electron Capture Detector"
1311	"Toxicity Characteristic Leaching Procedure"
1311ZHE	"Toxicity Characteristic Leaching Procedure"
3005A	"Acid Digestion of Waters for Total Recoverable or Dissolved Metals for Analysis by FLAA or ICP Spectroscopy"
3010A	"Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by FLAA or ICP Spectroscopy"
3050B	"Acid Digestion of Sediment, Sludge, and Soils"
3510C	"Separatory Funnel Liquid-Liquid Extraction"
3540	"Soxhlet Extraction"
3545	"Pressurized Fluid Extraction(PFE)"
3665	"Sulfuric Acid/Permanganate Cleanup"
5030B	"Purge-and-Trap for Aqueous Samples"
5035	"Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples"
6010B	"Inductively Coupled Plasma-Atomic Emission Spectrometry"
7470A	"Mercury in Liquid Waste (Manual Cold-Vapor Technique)"
7471A	"Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)"
8021B	"Aromatic and Halogenated Volatiles By Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors"
8015B	"Nonhalogenated Volatile Organics by Gas Chromatography" (Gasoline Range and Diesel Range Organics)

8015AZ	"C10-C32 Hydrocarbons in Soil-8015AZ"
8081A	"Organochlorine Pesticides by Gas Chromatography"
8082	"Polychlorinated Biphenyls (PCBs) by Gas Chromatography"
8260B	"Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS)"
8270C	"Semivolatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS)"
8310	"Polynuclear Aromatic Hydrocarbons"
9045C	"Soil and Waste pH"
9056	"Determination of Inorganic Anions by Ion Chromatography"
9060	"Total Organic Carbon"
9067	"Phenolics (Spectrophotometric, MBTH With Distillation)"
9095	Paint Filter
Walkley/Black	FOC/TOC WB
SM2320 B	"Alkalinity"
SM2540 B	"Total Solids Dried at 103-105° C"
SM2540 C	"Total Dissolved Solids Dried at 180° C"
SM2540 D	"Total Suspended Solids Dried at 103-105° C"
SM 3500 Fe+2	Ferrous Iron
SM4500-H+B	"pH Value"
SM4500-NH3 C	"4500-NH3" Ammonia
SM4500-Norg C	"4500-Norg" Total Kjeldahl Nitrogen (TKN)
SM4500-P B	"4500-P" Total Phosphorous
SM4500-S2 F	"4500-S2" Sulfide
SM5310 B	"5310" Total Organic Carbon (TOC)



## Criteria for Standard Operating Procedures

HEAL has Standard Operating Procedures (SOPs) for each of the test methods listed above. These SOPs are based upon the listed methods and detail the specific procedure and equipment utilized as well as the quality requirements necessary to prove the integrity of the data. SOPs are reviewed or revised every twelve months or sooner if necessary. The review/revision is documented in the Master SOP Logbook filed in the QA/QC Office. All SOPs are available in the LIMS linked under the specific test method. Administrative SOPs, which are not linked in the LIMS are available on desktops throughout the laboratory in the link to administrative SOPs folder.

Each HEAL test method SOP shall include or reference the following topics where applicable:

- Identification of the test method;
- Applicable matrix or matrices;
- Limits of detection and quantitation;
- Scope and application, including parameters to be analyzed;
- Summary of the test method;
- Definitions;
- Interferences;
- Safety;
- Equipment and supplies;
- Reagents and standards;
- Sample collection, preservation, shipment and storage;
- Quality control parameters;
- Calibration and standardization;
- Procedure;
- Data analysis and calculations;
- Method performance;
- Pollution prevention;
- Data assessment and acceptance criteria for quality control measures;
- Corrective actions for out-of-control data;
- Contingencies for handling out-of-control or unacceptable data;
- Waste management;
- References; and
- Any tables, diagrams, flowcharts and validation data.

## **7.0 Calibration**

All equipment and instrumentation used at HEAL are operated, maintained and calibrated according to manufacturers guidelines, as well as criteria set forth in applicable analytical methodology. Personnel who have been properly trained in their procedures perform operation and calibration. Brief descriptions of the calibration processes for our major laboratory equipment and instruments are found below.

### **Thermometers**

The thermometers in the laboratory are used to measure the temperatures of the refrigerators/freezers, ovens, water baths, hot blocks, ambient laboratory conditions, TCLP Extractions, digestion blocks and samples at the time of log-in. All NIST traceable thermometers are either removed from use upon their documented expiration date or they are checked annually with a NIST certified thermometer and a correction factor is noted on each thermometer log. See the most current Login SOP for detailed procedures on this calibration procedure.

Dickson Data Loggers are used to record sample and standard storage refrigerators over the weekend when the appropriate staff is not available to record the temperatures. These data loggers are shipped back to the manufacturer once a year to be re calibrated.

### **Refrigerators/Freezers**

Each laboratory refrigerator or freezer contains a thermometer capable of measuring to a minimum precision of 1°C. The thermometers are kept with the bulb immersed in liquid. Each workday, the temperatures of the refrigerators are recorded in a designated logbook to insure that the refrigerators are within the required designated range. Samples are stored separately from the standards to reduce the risk of contamination.

See the current catastrophic Failure SOP for the procedure regarding how to handle failed refrigerators or freezers.

### **Ovens**

The ovens contain thermometers graduated by 1° C. The ovens are calibrated quarterly against NIST thermometers and checked daily as required and in which ever way is dictated by or appropriate for the method in use.

## **Analytical and Table Top Balances**

The table top balances are capable of weighing to a minimum precision of 0.01 grams. The analytical balances are capable of weighing to a minimum precision of 0.0001 grams. Records are kept of daily calibration checks for the balances in use. Working weights are used in these checks. The balances are annually certified by an outside source and the certifications are on file with the QA/QCO.

Balances, unless otherwise indicated by method specific SOPs, will be checked daily with at least two weights that will bracket the working range of the balance for the day. Daily balance checks will be done using working weights that are calibrated annually against Class S weights. Class S weights are calibrated as required by an external provider. The Class S weights are used once a year or more frequently if required, to assign values to the Working Weights. During the daily balance checks the working weights are compared to their assigned values and must pass within 5% of their assigned value in order to validate the calibration of the balance. The assigned values for the working weights, as well as the daily checks, are recorded in the balance logbook for each balance.

## **Instrument Calibration**

An instrument calibration is the relationship between the known concentrations of a set of calibration standards introduced into an analytical instrument and the measured response they produce. Calibration curve standards are a prepared series of aliquots at various known concentrations levels from a primary source reference standard. Specific mathematical types of calibration techniques are outlined in SW-846 8000B. The entire initial calibration must be performed prior to sample analyses.

The lowest standard in the calibration curve must be at or below the required reporting limit.

Refer to the current SOP to determine the minimum requirement for calibration points.

Most compounds tend to be linear and a linear approach should be favored when linearity is suggested by the calibration data. Non-linear calibration should be considered only when a linear approach cannot be applied. It is not acceptable to use an alternate calibration procedure when a compound fails to perform in the usual manner. When this occurs it is indicative of instrument issues or operator error.

If a non-linear calibration curve fit is employed, a minimum of six calibration levels must be used for second-order (quadratic) curves.

When more than 5 levels of standards are analyzed in anticipation of using second-order calibration curves, all calibration points MUST be used regardless of the calibration option employed. The highest or lowest calibration point may be excluded for the purpose of narrowing the calibration range, and meeting the requirements for a specific calibration option. Otherwise, unjustified exclusion of calibration data is expressly forbidden.

Analytical methods vary in QC acceptance criteria. HEAL follows the method specific guidelines for QC acceptance. The specific acceptance criteria are outlined in the analytical methods and its corresponding SOP.

### **pH Meter**

The pH meter measures to a precision of 0.01 pH units. The pH calibration logbook contains the calibration before each use, or each day, if used more than once per day. It is calibrated using a minimum of 3 certified buffers. Also available with the pH meter is a magnetic stirrer with a temperature sensor. See the current pH SOP (SM4500 H+ B) for specific details regarding calibration of the pH probe.

### **Other Analytical Instrumentation and Equipment**

The conductivity probe is calibrated as needed and checked daily when in use.

Eppendorf (or equivalent brands) pipettes are checked gravimetrically prior to use.

### **Standards**

All of the source reference standards used are ordered from a reliable commercial vendor. A Certificate of Analysis (CoA), which verifies the quality of the standard, accompanies the standards from the vendor. The Certificates of Analysis are dated and stored on file by the Technical Directors or their designee. These standards are traceable to the National Institute of Standards (NIST). When salts are purchased and used as standards the certificate of purity must be obtained from the vendor and filed with the CoAs.

All standard solutions, calibration curve preparations, and all other quality control solutions are labeled in a manner that can be traced back to the original source reference standard. All source reference standards are entered into the LIMS with an appropriate description of the standard. Dilutions of the source reference standard (or any mixes of the source standards) are fully tracked in the LIMS. Standards are labeled with the date opened for use, and an expiration date.

As part of the quality assurance procedures at HEAL, analysts strictly adhere to manufacture recommendations for storage times/expiration dates and policies of analytical standards and quality control solutions.

### **Reagents**

HEAL ensures that the reagents used are of acceptable quality for their intended purpose. This is accomplished by ordering high quality reagents and adhering to good laboratory

practices so as to minimize contamination or chemical degradation. All reagents must meet any specifications noted in the analytical method. Refer to the current Purchase of Consumables SOP for details on how this is accomplished and documented.

Upon receipt, all reagents are assigned a separate ID number, and logged into the LIMS. All reagents shall be labeled with the date received into the laboratory and again with the date opened for use. Recommended shelf life shall be documented and controlled. Dilutions or solutions prepared shall be clearly labeled, dated, and initialed. These solutions are traceable back to their primary reagents.

All gases used with an instrument shall meet specifications of the manufacturer. All safety requirements that relate to maximum and/or minimum allowed pressure, fitting types, and leak test frequency, shall be followed. When a new tank of gas is placed in use, it shall be checked for leaks and the date put in use will be written in the instrument maintenance logbook.

HEAL continuously monitors the quality of the reagent water and provides the necessary indicators for maintenance of the purification systems in order to assure that the quality of laboratory reagent water meets established criteria for all analytical methods.

Reagent blank samples are also analyzed to ensure that no contamination is present at detectable levels. The frequency of reagent blank analysis is typically the same as calibration verification samples. Refrigerator storage blanks are stored in the volatiles refrigerator for a period of one week and analyzed and replaced once a week.

## 8.0 Maintenance

Maintenance logbooks are kept for each major instrument and all support equipment in order to document all repair and maintenance. In the front of the logbook, the following information is included:

- Unique name of the item or equipment
- Manufacturer
- Type of Instrument
- Model Number
- Serial Number
- Date received and date placed into service
- Location of Instrument
- Condition of instrument upon receipt

For routine maintenance, the following information shall be included in the log:

- Maintenance Date
- Maintenance Description
- Maintenance Performed by Initials

A manufacturer service agreement (or equivalent) covers most major instrumentation to assure prompt and reliable response to maintenance needs beyond HEAL instrument operator capabilities.

Refer to the current Maintenance and Troubleshooting SOP for each section in the laboratory for further information.



## **9.0 Data Integrity**

For HEAL's policy on ethics and data integrity see section 3.0 of this document. Upon being hired and annually thereafter, all employees at HEAL undergo documented data integrity training. All new employees sign an Ethics and Data Integrity Agreement, documenting their understanding of the high standards of integrity required at HEAL and outlining their responsibilities in regards to ethics and data integrity. See Appendix H for a copy of this agreement.

In instances of ethical concern analysts are required to report the known or suspected concern to their Technical Director, the Laboratory Manager or the QA/QCO. This will be done in a confidential and receptive environment, allowing all employees to privately discuss ethical issues or report items of ethical concern.

Once reported and documented the ethical concern will be immediately elevated to the Laboratory Manager and the need for an investigation, analyst remediation or termination will be determined on a case by case basis.

All reported instances of ethical concern will be thoroughly documented and handled in a manner sufficient to rectify any breaches in data integrity with an emphasis on preventing similar incidences from happening in the future.

## 9.0 Quality Control

### Internal Quality Control Checks

HEAL utilizes various internal quality control checks, including duplicates, matrix spikes, matrix spike duplicates, method blanks, laboratory control spikes, laboratory control spike duplicates, surrogates, internal standards, calibration standards, quality control charts, proficiency tests and calculated measurement uncertainty.

Refer to the current method SOP to determine the frequency and requirements of all quality controls. In the event that the frequency of analysis is not indicated in the method specific SOP, duplicate samples, laboratory control spikes (LCS), Method Blanks (MB) and matrix spikes and matrix spike duplicates (MS/MSD) are analyzed for every batch of twenty samples.

When sample volume is limited on a test that requires an MS/MSD an LCSD shall be analyzed to demonstrate precision and accuracy and when possible a sample duplicate will be analyzed.

Duplicates, are identical tests repeated for the same sample or matrix spike in order to determine the precision of the test method. A Relative Percent Difference (RPD) is calculated as a measure of this precision. Unless indicated in the SOP, the default acceptance limit is  $\leq 30\%$ .

Matrix Spikes and Matrix Spike Duplicates are spiked samples (MS/MSD) that are evaluated with a known added quantity of a target compound. This is to help determine the accuracy of the analyses and to determine the matrix affects on analyte recovery. A percent recovery is calculated to assess the quality of the accuracy. In the event that the acceptance criteria is not outlined in the SOP a default limits of 70-130% will be utilized. When an MSD is employed an RPD is calculated and when not indicated in the SOP shall be acceptable at  $\leq 30\%$ .

When appropriate for the method, a Method Blank should be analyzed with each batch of samples processed to assess contamination levels in the laboratory. MBs consist of all the reagents measured and treated as they are with samples, except without the samples. This enables the laboratory to ensure clean reagents and procedures. Guidelines should be in place for accepting or rejecting data based on the level of contamination in the blank. In the event that these guidelines are not dictated by the SOP or in client specific work plans, the MB should be less than the MDL reported for the analyte being reported.

A Laboratory Control Spike and Laboratory Control Spike Duplicate (LCS/LCSD) are reagent blanks, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes. It is generally used to establish intra-laboratory or analyst-specific precision and bias or to assess the performance of all or a portion of the measurement system. Guidelines are outline in each

SOP for the frequency and pass fail requirements for LCS and LCSDs. These limits can be set utilizing control charts as discussed below.

Surrogates are utilized when dictated by method and are substances with properties that mimic the analytes of interest. The surrogate is an analyte that is unlikely to be found in environmental samples. Refer to the appropriate Method and SOP for guidelines on pass/fail requirements for surrogates.

Internal Standards are utilized when dictated by the method and are known amounts of standard added to a test portion of a sample as a reference for evaluating and controlling the precision and bias of the applied analytical method. Refer to the appropriate Method and SOP for guidelines on pass/fail requirements for Internal Standards.

Proficiency Test (PT) Samples are samples provided by an unbiased third party. They are typically analyzed twice a year, or at any other interval defined in the method SOP. They contain a pre-determined concentration of the target compound, which is unknown to HEAL. HEAL's management and all analyst shall ensure that all PT samples are handled in the same manner as real environmental samples utilizing the same staff, methods, procedures, equipment, facilities and frequency of analysis as used for routine analysis of that analyte. When analyzing a PT, HEAL shall employ the same calibration, laboratory quality control and acceptance criteria, sequence of analytical steps, number of replicates and other procedures as used when analyzing routine samples.

With regards to analyzing PT Samples HEAL shall not send any PT sample, or portion of a PT sample, to another laboratory for any analysis for which we seeks accreditation, or are accredited. HEAL shall not knowingly receive any PT sample or portion of a PT sample from another laboratory for any analysis for which the sending laboratory seeks accreditation, or is accredited. Laboratory management or staff will not communicate with any individual at another laboratory concerning the PT sample. Laboratory management or staff shall not attempt to obtain the assigned value of any PT sample from the PT Provider.

Calibration standards are standards run to calibrate. Once the calibration is established the same standards can be analyzed as Continuing Calibration Verifications (CCV), used to confirm the consistency of the instrumentation. Calibration standards can be utilized at the beginning and end of each batch, or more frequently as required. Typically Continuing Calibration Blanks (CCB) are run in conjunction with CCVs. Refer to the current method SOP for frequency and pass/fail requirements of CCVs and CCBs.

Control Limits are limits of acceptable ranges of the values of quality control checks. If a value falls outside the appropriate range, immediate evaluation and assessment of the procedure is required. Data generated with laboratory control samples that fall outside of the established control limits are judged to be generated during an "out-of-control" situation. These data are considered suspect and shall be repeated or reported with qualifiers.

Control limits should be established and updated according to the requirements of the method being utilized. When the method does not specify, and control limits are to be generated or updated for a test, the following guidelines shall be utilized.

Control Limits should be updated periodically and at least annually. The Limits should be generated utilizing the most recent 20-40 data values and Control Charts should be printed when these limits are updated in the LIMS. The data values used shall not reuse values that were included in the previous Control Limit update. The data values shall also be reviewed by the LIMS for any Grubbs Outliers, and if identified, the outliers must be removed prior to generating new limits. Once new Control Limits have been established and updated in the LIMS, the printed Control Chart shall be reviewed by the appropriate technical director and primary analyst performing the analysis for possible trends and compared to the previous Control Charts. The technical director initials the control charts, indicating that they have reviewed and determined the updated Limits to be accurate and appropriate. These initialed charts are then filed in the QA/QCO office.

Calculated Measurement Uncertainty is calculated annually using LCSs in order to determine the laboratory specific uncertainty associated with each test method. These uncertainty values are available to our clients upon request and are utilized as a trending tool internally to determine the effectiveness of new variables introduced into the procedure over time.

## **Precision, Accuracy, Detection Levels**

### **Precision**

The laboratory uses sample duplicates, laboratory control spike duplicates and matrix spike duplicates to assess precision in terms of relative percent difference (RPD). HEAL requires the RPD to fall within the 99% confidence interval of established control charts or an RPD of less than 30% if control charts are not available. RPD's greater than these limits are considered out-of-control and require an appropriate response.

$$RPD = \frac{2 \times (\text{Sample Result} - \text{Duplicate Result})}{(\text{Sample Result} + \text{Duplicate Result})} \times 100$$

### **Accuracy**

The accuracy of an analysis refers to the difference between the calculated value and the actual value of a measurement. The accuracy of a laboratory result is evaluated by comparing the measured amount of QC reference material recovered from a sample and the known amount added. Control limits can be established for each analytical method and sample matrix. Recoveries are assessed to determine the method efficiency and/or the matrix effect.

Analytical accuracy is expressed as the percent recovery (%R) of an analyte or parameter. A known amount of analyte is added to an environmental sample before

the sample is prepared and subsequently analyzed. The equation used to calculate percent recovery is:

$$\% \text{Recovery} = \{(\text{concentration}^* \text{ recovered})/(\text{concentration}^* \text{ added})\} \times 100$$

\*or amount

HEAL requires that the Percent Recovery to fall within the 99 % confidence interval of established control limits. A value that falls outside of the confidence interval requires a warning and process evaluation. The confidence intervals are calculated by determining the mean and sample standard deviation. If control limits are not available, the range of 70 to 130% is used unless the specific method dictates otherwise. Percent Recoveries outside of this range mandate additional action such as analyses by Method of Standard Additions, additional sample preparation(s) where applicable, method changes, out-of-control action or data qualification.

### Detection Limit

Current practices at HEAL define the Detection Limit (DL) as the smallest amount that can be detected above the baseline noise in a procedure within a stated confidence level.

HEAL presently utilizes an Instrument Detection Limit (IDL), a Method Detection Limit (MDL), and a Practical Quantitation Limit (PQL). The relationship between these levels is approximately  
IDL: MDL: PQL = 1:5:5.

The IDL is a measure of the sensitivity of an analytical instrument. The IDL is the amount which, when injected, produces a detectable signal in 99% of the analyses at that concentration. An IDL can be considered the minimum level of analyte concentration that is detectable above random baseline noise.

The MDL is a measure of the sensitivity of an analytical method. An MDL determination (as required in 40CFR part 136 Appendix B) consists of replicate spiked samples carried through all necessary preparation steps. The spike concentration is three times the standard deviation of three replicates of spikes. At least seven replicates are spiked and analyzed and their standard deviation (s) calculated. Routine variability is critical in passing the 10 times rule and is best achieved by running the MDLs over different days and when possible over several calibration events. The method detection limit (MDL) can be calculated using the standard deviation according to the formula:

$$\text{MDL} = s * t (99\%)$$

Where  $t$  (99%) is the student's  $t$  value for the 99% confidence interval. It depends on the number of trials used in calculating the sample standard deviation, so choose the appropriate value according to the number of trials.

Number of Trials	$t(99\%)$
6	3.36
7	3.14
8	3.00
9	2.90

The calculated MDL must not be less than 10 times the spiked amount or the study must be performed again with a lower concentration.

The PQL is significant because different laboratories can produce different MDLs although they may employ the same analytical procedures, instruments and sample matrices. The PQL is about two to five times the MDL and represents a practical, and routinely achievable, reporting level with a good certainty that the reported value is reliable. It is often determined by regulatory limits. The reported PQL for a sample is dependent on the dilution factor utilized during sample analysis.

## Quality Control Parameter Calculations

### Mean

The sample mean is also known as the arithmetic average. It can be calculated by adding all of the appropriate values together, and dividing this sum by the number of values.

$$\text{Average} = (\sum x_i) / n$$

$x_i$  = the value  $x$  in the  $i^{\text{th}}$  trial  
 $n$  = the number of trials

### Standard Deviation

The sample standard deviation, represented by  $s$ , is a measure of dispersion. The dispersion is considered to be the difference between the average and each of the values  $x_i$ . The variance,  $s^2$ , can be calculated by summing the squares of the differences and dividing by the number of differences. The sample standard deviation,  $s$ , can be found by taking the square root of the variance.



$$\text{Standard deviation} = s = \left[ \frac{\sum (x_i - \text{average})^2}{(n - 1)} \right]^{1/2}$$

### Percent Recovery (MS, MSD, LCS and LCSD)

$$\text{Percent Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result}) \times 100}{(\text{Spike Added})}$$

### Confidence Intervals

Confidence intervals are calculated by the LIMS using the average (x), the sample standard deviation (s), and the Student's t distribution (s-dist), which depends on the number of values used to calculate the average and sample standard deviation.

The formula is: confidence interval =  $x \pm s * s\text{-dist}$

Student's t Distribution

# values	10	15	20	25	31	41	61	121	> 121
95 %	2.262	2.145	2.093	2.064	2.042	2.021	2.000	1.980	1.960
99%	3.250	2.977	2.861	2.797	2.750	2.704	2.660	2.617	2.576

Unless there is insufficient data, at least 20 values will always be used in calculating the confidence intervals.

### RPD (Relative Percent Difference)

Analytical precision is expressed as a percentage of the difference between the results of duplicate samples for a given analyst. Relative percent difference (RPD) is calculated as follows:

$$\text{RPD} = \frac{2 \times (\text{Sample Result} - \text{Duplicate Result}) \times 100}{(\text{Sample Result} + \text{Duplicate Result})}$$

### Uncertainty Measurements

Uncertainty, as defined by ISO, is the parameter associated with the result of a measurement that characterizes the dispersion of the values that could reasonably be attributed to the measurement. Ultimately uncertainty measurements are used to state how good a test result is and to allow the end user of data to properly interpret their reported data. All procedures allow for some uncertainty. For most analyses the components and estimates of uncertainty are reduced by following well established test methods. To further reduce uncertainty, results are generally not reported below the lowest calibration point (PQL) or above the highest calibration point (UQL).

Understanding that there are many influence quantities affecting a measurement result, so many in fact that it is impossible to identify all of them, HEAL calculates measurement uncertainty at least annually using LCSs. These estimations of measurement uncertainty are kept on file in the method folders in the QA/QC office.

Measurement Uncertainty contributors are those that may be determined statistically. These shall be generated by estimating the overall uncertainty in the entire analytical process by measuring the dispersion of values obtained from laboratory control samples over time. At least 20 of the most recent LCS data points are gathered. The standard deviation (s) is calculated using these LCSs data points. Since it can be assumed that the possible estimated values of the spikes are approximately normally distributed with approximate standard deviation (s), the unknown value of the spike is believed to lie in 95% confidence interval, corresponding to an uncertainty range of  $\pm 2(s)$ .

Calculate standard deviation (s) and 95% confidence interval according to the following formulae:

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{(n-1)}}$$

Where: s = standard deviation

x = number in series

$\bar{x}$  = calculated mean of series

n = number of samples taken

$$95\% \text{ confidence} = 2 \times s$$

Example: Assuming that after gathering 20 of the most recent LCS results for Bromide, we have calculated the standard deviations of the values and achieved a result of 0.0326, our measurement uncertainty for Bromide (at 95% confidence =  $2 \times s$ ) is 0.0652.

## Calibration Calculations

### 1. Response Factor or Calibration Factor:

$$RF = ((A_x)(C_{is})) / ((A_{is})(C_x))$$

$$CF = (A_x) / (C_x)$$

#### a. Average RF or CF

$$RF_{AVE} = \Sigma RF_i / n$$

b. Standard Deviation

$$s = \text{SQRT} \{ [ \Sigma (RF_i - RF_{AVE})^2 ] / (n-1) \}$$

c. Relative Standard Deviation

$$RSD = s / RF_{AVE}$$

Where:

$A_x$  = Area of the compound

$C_x$  = Concentration of the compound

$A_{is}$  = Area of the internal standard

$C_{is}$  = Concentration of the internal standard

$n$  = number of pairs of data

$RF_i$  = Response Factor (or other determined value)

$RF_{AVE}$  = Average of all the response factors

$\Sigma$  = the sum of all the individual values

## 2. Linear Regression

$$y = mx + b$$

a. Slope (m)

$$m = (n \Sigma x_i y_i - (\Sigma x_i)(\Sigma y_i)) / (n \Sigma x_i^2 - (\Sigma x_i)^2)$$

b. Intercept (b)

$$b = y_{AVE} - m(x_{AVE})$$

c. Correlation Coefficient (cc)

$$CC(r) = \{ \Sigma ((x_i - x_{ave})(y_i - y_{ave})) \} / \{ \text{SQRT}((\Sigma (x_i - x_{ave})^2)(\Sigma (y_i - y_{ave})^2)) \}$$

Or

$$CC(r) = [(\Sigma w * \Sigma wxy) - (\Sigma wx * \Sigma wy)] / (\text{sqrt}([(\Sigma w * \Sigma wx^2) - (\Sigma wx * \Sigma wx)] * [(\Sigma w * \Sigma wy^2) - (\Sigma wy * \Sigma wy)]))$$

d. Coefficient of Determination

$$COD(r^2) = CC * CC$$

Where:

y = Response (Area) Ratio  $A_x/A_{is}$

x = Concentration Ratio  $C_x/C_{is}$

m = slope

b = intercept

n = number of replicate x,y pairs

$x_i$  = individual values for independent variable

$y_i$  = individual values for dependent variable

$\Sigma$  = the sum of all the individual values

$x_{ave}$  = average of the x values

$y_{ave}$  = average of the y values

w = weighting factor, for equal weighting w=1

### 3. Quadratic Regression

$$y = ax^2 + bx + c$$

#### a. Coefficient of Determination

$$COD (r^2) = (\Sigma(y_i - y_{ave})^2 - \{[(n-1)/(n-p)] * [\Sigma(y_i - Y_i)^2]\}) / \Sigma(y_i - y_{ave})^2$$

Where:

y = Response (Area) Ratio  $A_x/A_{is}$

x = Concentration Ratio  $C_x/C_{is}$

a =  $x^2$  coefficient

b = x coefficient

c = intercept

$y_i$  = individual values for each dependent variable

$x_i$  = individual values for each independent variable

$y_{ave}$  = average of the y values

n = number of pairs of data

p = number of parameters in the polynomial equation (I.e., 3 for third order, 2 for second order)

$$Y_i = ((2*a*(C_x/C_{is})^2) - b^2 + b + (4*a*c)) / (4a)$$

#### b. Coefficients (a,b,c) of a Quadratic Regression

$$a = S_{(x_2y)}S_{(xx)} - S_{(xy)}S_{(xx_2)} / S_{(xx)}S_{(x_2x_2)} - [S_{(xx_2)}]^2$$

$$b = S_{(xy)}S_{(x_2x_2)} - S_{(x_2y)}S_{(xx_2)} / S_{(xx)}S_{(x_2x_2)} - [S_{(xx_2)}]^2$$

$$c = [(\Sigma yw)/n] - b * [(\Sigma xw)/n] - a * [\Sigma(x^2w)/n]$$

Where:

n = number of replicate x,y pairs

x = x values

y = y values

$$w = S^{-2} / (\sum S^{-2} / n)$$

$$S_{(xx)} = (\sum x^2 w) - [(\sum x w)^2 / n]$$

$$S_{(xy)} = (\sum x y w) - [(\sum x w)(\sum y w) / n]$$

$$S_{(xx2)} = (\sum x^3 w) - [(\sum x w)(\sum x^2 w) / n]$$

$$S_{(x2y)} = (\sum x^2 y w) - [(\sum x^2 w)(\sum y w) / n]$$

$$S_{(x2x2)} = (\sum x^4 w) - [(\sum x^2 w)^2 / n]$$

Or If unweighted calibration, w=1

$$S_{(xx)} = (Sx2) - [(Sx)^2 / n]$$

$$S_{(xy)} = (Sxy) - [(Sx)(Sy) / n]$$

$$S_{(xx2)} = (Sx3) - [(Sx)(Sx2) / n]$$

$$S_{(x2y)} = (Sx2y) - [(Sx2)(Sy) / n]$$

$$S_{(x2x2)} = (Sx4) - [(Sx2)^2 / n]$$

## **11.0 Data Reduction, Validation, Reporting, and Record Keeping**

All data reported must be of the highest possible accuracy and quality. During the processes of data reduction, validation, and report generation, all work is thoroughly checked to insure that error is minimized.

### **Data Reduction**

The analyst who generated the data usually performs the data reduction. The calculations include evaluation of surrogate recoveries (where applicable), and other miscellaneous calculations related to the sample quantitation.

If the results are computer generated, then the formulas must be confirmed by hand calculations, at minimum, one per batch.

See the current Data Validation SOP for details regarding data reduction.

### **Validation**

A senior analyst, most often the section supervisor, validates the data. All data undergoes peer review. If an error is detected it is brought to the analyst attention to rectify and further checks ensure that all data for that batch is sound. Previous and/or common mistakes are stringently monitored throughout the validation process. Data is reported using appropriate significant figure criteria. In most cases, two significant digits are utilized, but three significant digits can be used in QC calculations. Significant digits are not rounded until after the last step of a sample calculation. All final reports undergo a review by the laboratory manager, or the project manager or their designee, to provide a logical review of all results before they are released to the client.

If data is to be manually transferred from one medium to another, the transcribed data is checked by a peer. This includes data typing, computer data entry, chromatographic data transfer, data table inclusion to a cover letter, or when data results are combined with other data fields.

All hand written data from run logs, analytical standard logbooks, hand entered data logbooks, or on instrument generated chromatograms, are systematically archived should the need for future retrieval arise.

See the current Data Validation SOP for detail regarding data validation.



## Reports and Records

All records at HEAL are retained and maintained through the procedures outlined in the most recent version of the Records Control SOP.

The reports are compiled by the Laboratory Information Management System (LIMS). Most data is transferred directly from the instruments to the LIMS. After being processed by the analyst and reviewed by a data reviewer, final reports are approved and signed by the senior laboratory management. A comparative analysis of the data is performed at this point. For example, if TKN and NH3 are analyzed on the same sample the NH3 result should never be greater than the TKN result. Lab results and reports are released only to appropriately designated individuals. Release of the data can be by fax, email, electronic deliverables, or mailed hard copy.

When a project is completed, the project file folder is stored with a hard copy of the report, relevant supporting data, and the quality assurance/control worksheets. These folders are kept on file and are arranged by project number. Additionally, all electronic data is backed up daily on the HEAL main server. The backup includes raw data, chromatograms and report documents. Hard copies of chromatograms are stored separately according to the instrument and the analysis date. All records and analytical data reports are retained in a secure location as permanent records for a minimum period of five years (unless specified otherwise in a client contract). Access to archived information shall be documented with an access log. Access to archived electronic reports and data will be protected by a project manager password. In the event that HEAL transfers ownership or terminates business practices, complete records will be maintained or transferred according to the client's instructions.

After issuance, the original report shall remain unchanged. If a correction to the report is necessary, then an additional document shall be issued. This document shall have a title of "Addendum to Test Report or Correction to Original Report", or equivalent. Demonstration of original report integrity comes in two forms. First, the report date is included on each page of the final report. Second, each page is numbered in sequential order, making the addition or omission of any data page(s) readily detectable.

## 12.0 Corrective Action

Refer to the most recent version of the Data Validation SOP for the procedure utilized in filling out a Corrective Action Report.

The limits that have been defined for data acceptability also form the basis for corrective action initiation. Initiation of corrective action occurs when the data generated from continuing calibration standard, sample surrogate recovery, laboratory control spike, matrix spike or sample duplicates exceed acceptance criteria. If corrective action is necessary, the analyst or the section supervisor will coordinate to take the following steps to determine and correct the measurement system deficiency:

Check all calculations and data measurements systems (Calibrations, reagents, instrument performance checks etc.).

Assure that proper procedures were followed.

Unforeseen problems that arise during sample preparation and/or sample analysis that lead to treating a sample differently from documented procedures shall be documented with a corrective action report. The section supervisor and laboratory manager shall be made aware of the problem at the time of the occurrence. See the appropriate SOP regarding departures from documented procedures.

Continuing calibration standards below acceptance criteria can not be used for reporting analytical data unless method specific criteria states otherwise.

Continuing calibration standards above acceptance criteria can be used to report data so long as the failure is isolated to a single standard and the corresponding samples are non-detect for the failing analyte.

Samples with non-compliant surrogate recoveries should be reanalyzed unless deemed unnecessary by the supervisor for matrix, historical data, or other analysis related anomalies.

Laboratory and Matrix Spike acceptance criteria vary significantly depending on method and matrix. Analysts and supervisors meet and discuss appropriate corrective action measures as spike failures occur.

Sample duplicates with RPD values outside control limits require supervisor evaluation and possible reanalysis.

A second mechanism for initiation of corrective action is that resulting from Quality Assurance performance audits, system audits, inter and intra-laboratory comparison studies. Corrective Actions initiated through this mechanism will be monitored and coordinated by the laboratory QA/QCO.

All corrective action forms are entered in the LIMS and included with the raw data for peer review, signed by the technical director of the section and included in the case narrative to

the client whose samples were affected. All Corrective action forms in the LIMS are reviewed by the QA/QCO.

### 13.0 Quality Assurance Audits, Reports and Complaints

#### Internal/External Systems' Audits, Performance Evaluations, and Complaints

Several procedures are used to assess the effectiveness of the quality control system. One of these methods includes internal performance evaluations, which are conducted by the use of control samples, replicate measurements and control charts. Another method is external performance audits, which are conducted by the use of inter-laboratory checks, such as participation in laboratory evaluation programs and performance evaluation samples available from a NELAC accredited Proficiency Standard Vendor.

Proficiency samples will be obtained twice per year from an appropriate vendor for all tests and matrices for which we are accredited and for which there are PTs available. HEAL participates in soil, waste water, drinking water and underground storage tank PT studies. Copies of results are available upon request. HEAL's management and all analyst shall ensure that all PT samples are handled in the same manner as real environmental samples utilizing the same staff, methods, procedures, equipment, facilities and frequency of analysis as used for routine analysis of that analyte. When analyzing a PT, HEAL shall employ the same calibration, laboratory quality control and acceptance criteria, sequence of analytical steps, number of replicates and other procedures as used when analyzing routine samples.

With regards to analyzing PT Samples HEAL shall not send any PT sample, or portion of a PT sample, to another laboratory for any analysis for which we seeks accreditation, or are accredited. HEAL shall not knowingly receive any PT sample or portion of a PT sample from another laboratory for any analysis for which the sending laboratory seeks accreditation, or is accredited. Laboratory management or staff will not communicate with any individual at another laboratory concerning the PT sample. Laboratory management or staff shall no attempt to obtain the assigned value of any PT sample from the PT Provider.

Internal Audits are performed annually by the QA/QCO in accordance with the current Internal Audit SOP. They are performed using the guidelines outlined below:

The system audit consists of a qualitative inspection of the QA system in the laboratory and an assessment of the adequacy of the physical facilities for sampling, calibration, and measurement. This audit includes a careful evaluation and review of laboratory quality control procedures. Including but not limited to:

1. Review of staff qualifications, demonstration of capability, and personnel training programs
2. Storage and handling of reagents, standards and samples
3. Standard preparation logbook and LIMS procedures
4. Extraction logbooks
5. Raw data logbooks
6. Analytical logbooks or batch printouts and instrument maintenance logbooks
7. Data review procedures

8. Corrective action procedures
9. Review of data packages is performed regularly by the lab manager/QA Officer.

The QA/QCO will conduct these audits on an annual basis.

### **Management Reviews**

HEAL management shall periodically, and at least annually conduct a review of the laboratory's quality system and environmental testing activities to ensure their continuing suitability and effectiveness, and to introduce necessary changes or improvements. The review shall take account of:

1. the suitability and implementation of policies and procedures
2. reports from managerial and supervisory personnel
3. the outcome of recent internal audits
4. corrective and preventive actions
5. assessments by external bodies
6. the results of interlaboratory comparisons or proficiency tests
7. changes in volume and type of work
8. client feed back
9. complaints
10. other relevant factors, such as laboratory health and safety, QC activities, resources and staff training.

Findings from management reviews and the actions that arise from them shall be recorded and any corrective actions that arise shall be completed in an appropriate and agreed upon timescale.

### **Complaints**

Complaints from clients are documented and given to the laboratory manager. The lab manager shall review the information and contact the client. If doubt is raised concerning the laboratories policies or procedures, then an audit of the section or sections may be performed. All records of complaints and subsequent actions shall be maintained in the client compliant logbook for 5 years unless otherwise stated.

### **Internal and External Reports**

The QA/QCO is responsible for preparation and submission of quality assurance reports to the appropriate management personnel as problems and issues arise. These reports include the assessment of measurement systems, data precision and accuracy, and the results of performance and system audits. Additionally, they also include significant QA problems, corrective actions, and recommended resolution measures. Reports of these Quality Assurance Audits describe the particular activities audited, procedures utilized in

the examination and evaluation of laboratory records, and data validation procedures. Finally, there are procedures for evaluating the performance of Quality Control and Quality Assurance activities, and laboratory deficiencies and the implementation of corrective actions with the review requirements.



#### 14.0 Analytical Protocols Utilized at Hall Environmental Analysis Laboratory, Inc.

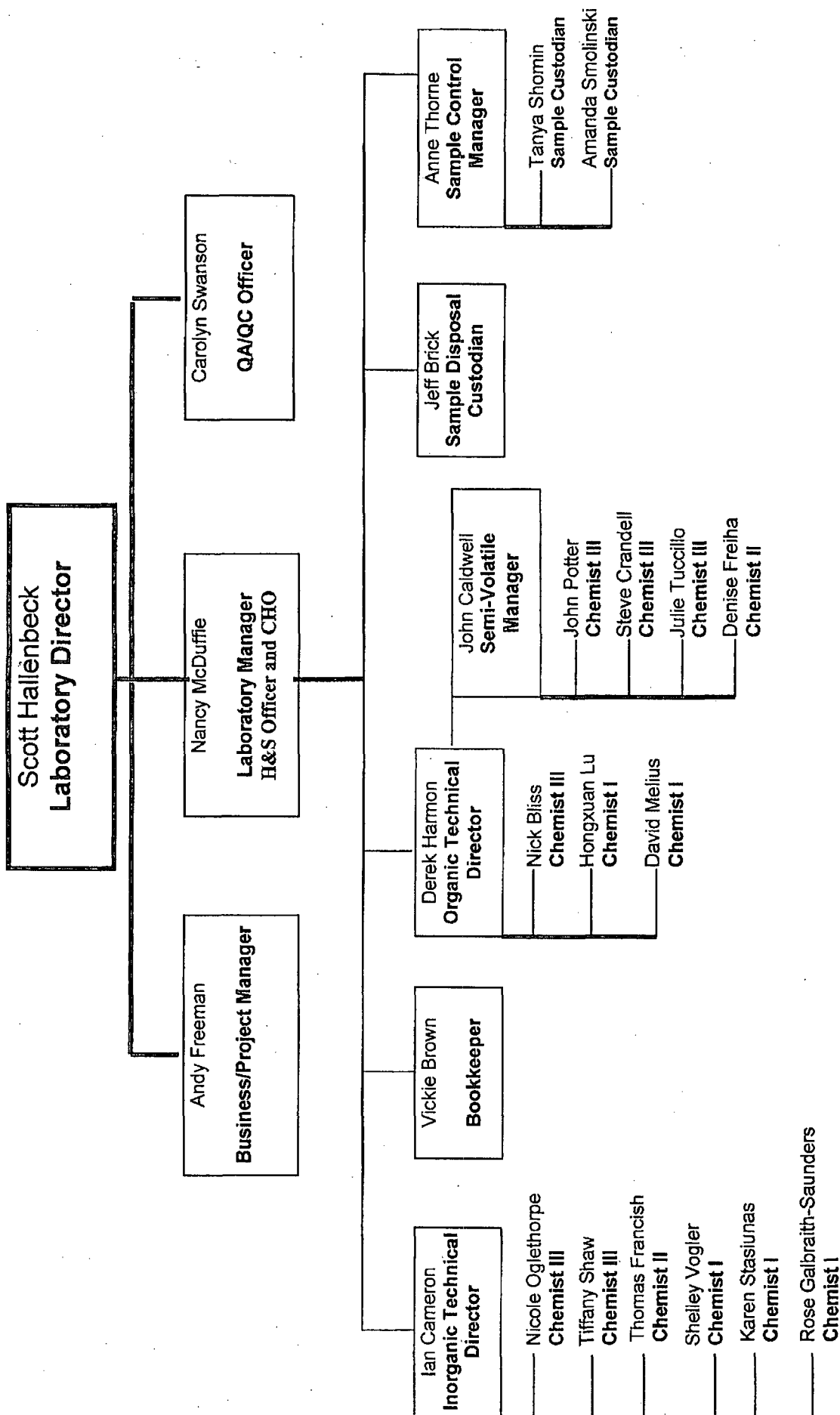
1. Standard Methods for the Examination of Water and Wastewater: AOWA, AWWA, and WPCG; 20th Edition, 1999.
2. Methods for Chemical Analysis of Water and Wastes, USEPA, EPA-600/4-79-020, March 1979 and as amended December, 1982 (EPA-600/4-82-055)
3. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, USEPA SW-846, 3rd Edition, Updates I, II, IIA, IIB, III, December, 1996.
4. Methods of Soil Analysis: Parts 1 & 2, 2nd Edition, Agronomy Society of America, Monograph 9
5. Diagnosis & Improvement of Saline & Alkali Soils, Agriculture Handbook No. 60, USDA, 1954
6. Handbook on Reference Methods for Soil Testing, The Council on Soil Testing & Plant Analysis, 1980 and 1992
7. Field and Laboratory Methods Applicable to Overburdens and Mine Soils, USEPA, EPA-600/2-78-054, March 1978
8. Laboratory Procedures for Analyses of Oilfield Waste, Department of Natural Resources, Office of Conservation, Injection and Mining Division, Louisiana, August 1988
9. Soil Testing Methods Used at Colorado State University for the Evaluation of Fertility, Salinity and Trace Element Toxicity, Technical Bulletin LT B88-2 January, 1988
10. Manual of Operating Procedures for the Analysis of Selected Soil, Water, Plant Tissue and Wastes Chemical and physical Parameter, Soil, Water, and Plant Analysis Laboratory, Dept. of Soil and Water Science, The University of Arizona, August 1989
11. Sampling Procedures and Chemical Methods in Use at the U.S. Salinity Laboratory for Characterizing Salt-Affected Soils and Water, USDA Salinity Laboratory.
12. Procedures for Collecting Soil Samples and Methods of Analysis for Soil Survey, USDA Soil Conservation Service, SSIR No. 1.
13. Soil Survey Laboratory Methods Manual, Soil Survey Laboratory Staff. Soil Survey Investigations Report No. 42, version 2.0, August 1992.
14. Methods for the Determination of Metals in Environmental Samples, USEPA, EPA-600/4-91-010, June 1991
15. The Merck Index, Eleventh Edition, Merck & Co., Inc. 1989.

16. Handbook of Chemistry and Physics, 62nd Edition, CRC Press, Inc. 1981-1982.
17. Analytical Chemistry of PCB's. Erickson, Mitchell D., CRC Press, Inc. 1992.
18. Environmental Perspective on the Emerging Oil Shale Industry, EPA Oil & Shale Research Group.
19. Polycyclic Aromatic Hydrocarbons in Water Systems, CRC Press, Inc.
20. Quality Systems for Analytical Services, Revision 2.2, U.S. Department of Energy, October 2006.

# Appendix A

## Personnel Chart / Organizational Structure

# Diagram of Organizational Structure





# OREGON

## ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM



NELAP Recognized

**Hall Environmental Analysis Laboratory, Inc.**

**NM100001**

4901 Hawkins Rd. NE, Suite D

Albuquerque, NM 87109

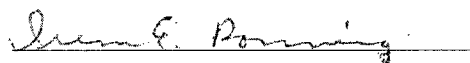
IS GRANTED APPROVAL BY ORELAP UNDER THE 2003 NELAC STANDARDS, TO  
PERFORM ANALYSES ON ENVIRONMENTAL SAMPLES IN MATRICES AS LISTED  
BELOW:

<i>Air</i>	<i>Drinking Water</i>	<i>Non Potable Water</i>	<i>Solids and Chem. Waste</i>	<i>Tissue</i>
	Chemistry	Chemistry	Chemistry	

AND AS RECORDED IN THE LIST OF APPROVED ANALYTES, METHODS,  
ANALYTIC TECHNIQUES, AND FIELDS OF TESTING ISSUED CONCURRENTLY  
WITH THIS CERTIFICATE AND REVISED AS NECESSARY.

ACCREDITED STATUS DEPENDS ON SUCCESSFUL ONGOING PARTICIPATION IN THE PROGRAM AND  
CONTINUED COMPLIANCE WITH THE STANDARDS.

CUSTOMERS ARE URGED TO VERIFY THE LABORATORY'S CURRENT ACCREDITATION STATUS IN  
OREGON.

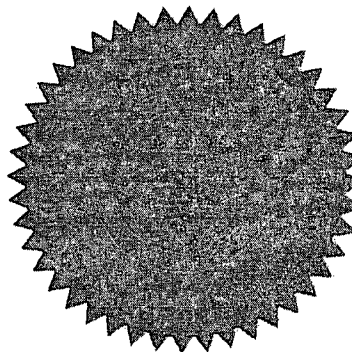


Irene E. Ronning, Ph.D.  
ORELAP Administrator  
3150 NW 229th Ave, Suite 100  
Hillsboro, OR 97124

ISSUE DATE: 3/1/2008

EXPIRATION DATE: 2/28/2009

Certificate No: **NM100001-009**





Oregon

**Environmental Laboratory Accreditation Program**



Department of Agriculture, Laboratory Division  
Department of Environmental Quality, Laboratory Division  
Department of Human Services, Public Health Laboratory

Public Health Laboratory  
3150 NW 229th Ave, Suite 100  
Hillsboro, OR, OR 97124 NELAP Recognized  
(503) 693-4122  
FAX (503) 693-5602

**ORELAP Fields of Accreditation**

ORELAPID: NM100001  
EPACode: NM00035

**Hall Environmental Analysis Laboratory, Inc.**

4901 Hawkins Rd. NE, Suite D  
Albuquerque, NM, 87109

Certificate:  
NM100001-009

Issue Date: 3/1/2008

Expiration Date: 2/28/2009

As of 03/01/2008 this list supercedes all previous lists for this certificate number.  
Customers: Please verify the current accreditation standing with ORELAP.

MATRIX: Drinking Water		
Reference	Code	Description
EPA 200.7 5	10014003	ICP - metals
<u>Analyte Code</u>	<u>Analyte</u>	
1000	Aluminum	
1015	Barium	
1020	Beryllium	
1025	Boron	
1030	Cadmium	
1035	Calcium	
1040	Chromium	
1055	Copper	
1070	Iron	
1075	Lead	
1085	Magnesium	
1090	Manganese	
1100	Molybdenum	
1105	Nickel	
1125	Potassium	
1150	Silver	
1155	Sodium	
1175	Tin	
1180	Titanium	
1185	Vanadium	
1190	Zinc	
EPA 245.1 3	10036609	Mercury by Cold Vapor Atomic Absorption
<u>Analyte Code</u>	<u>Analyte</u>	
1095	Mercury	
EPA 300.0	10053006	Ion chromatography - anions.
<u>Analyte Code</u>	<u>Analyte</u>	
1575	Chloride	
1730	Fluoride	
1810	Nitrate as N	
1835	Nitrite	
2000	Sulfate	
EPA 300.0 2.1	10053200	Inorganic Anions in water by Ion Chromatography
<u>Analyte Code</u>	<u>Analyte</u>	
1870	Orthophosphate as P	



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EPA 5030B 2		10153409	Purge and trap for aqueous samples
<u>Analyte Code</u>	<u>Analyte</u>		
125	Extraction/Preparation		
EPA 504.1		10083008	EDB/DBCP/TCP micro-extraction, GC/ECD
<u>Analyte Code</u>	<u>Analyte</u>		
4570	1,2-Dibromo-3-chloropropane (DBCP)		
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)		
EPA 524.2 4.1		10088809	Volatile Organic Compounds GC/MS Capillary Column
<u>Analyte Code</u>	<u>Analyte</u>		
5105	1,1,1,2-Tetrachloroethane		
5160	1,1,1-Trichloroethane		
5110	1,1,2,2-Tetrachloroethane		
5165	1,1,2-Trichloroethane		
4630	1,1-Dichloroethane		
4640	1,1-Dichloroethylene		
4670	1,1-Dichloropropene		
5150	1,2,3-Trichlorobenzene		
5180	1,2,3-Trichloropropane		
5155	1,2,4-Trichlorobenzene		
5210	1,2,4-Trimethylbenzene		
4610	1,2-Dichlorobenzene		
4635	1,2-Dichloroethane		
4655	1,2-Dichloropropane		
5215	1,3,5-Trimethylbenzene		
4615	1,3-Dichlorobenzene		
4660	1,3-Dichloropropane		
4620	1,4-Dichlorobenzene		
4535	2-Chlorotoluene		
4540	4-Chlorotoluene		
4375	Benzene		
4385	Bromobenzene		
4390	Bromochloromethane		
4395	Bromodichloromethane		
4400	Bromoform		
4950	Bromomethane (Methyl bromide)		
4455	Carbon tetrachloride		
4475	Chlorobenzene		
4485	Chloroethane		
4505	Chloroform		
105	Chloromethane		
4645	cis-1,2-Dichloroethylene		
4680	cis-1,3-Dichloropropene		
4575	Dibromochloromethane		
4595	Dibromomethane		
4650	Dichloromethane (DCM, Methylene chloride)		
4765	Ethylbenzene		
4835	Hexachlorobutadiene		
4900	Isopropylbenzene		
5000	Methyl tert-butyl ether (MTBE)		
4435	n-Butylbenzene		
5090	n-Propylbenzene		

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4440	sec-Butylbenzene
5100	Styrene
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane
5235	Vinyl chloride
5260	Xylene (total)

---

SM 2540 C 20th ED	20050004	Total Dissolved Solids
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<u>Analyte Code</u>	<u>Analyte</u>
1955	Residue-filterable (TDS)

---

SM 4500-H+ B 20th ED	20104807	pH by Probe
----------------------	----------	-------------

---

<u>Analyte Code</u>	<u>Analyte</u>
1900	pH

---

SM 5310 B 20th ED	20137400	Total Organic Carbon by Combustion Infra-red Method
-------------------	----------	---

---

<u>Analyte Code</u>	<u>Analyte</u>
2040	Total Organic Carbon

---

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### MATRIX: Non-Rotable Water

Reference	Code	Description
EPA 300.0	10053006	Ion chromatography - anions.
<u>Analyte Code</u>	<u>Analyte</u>	
1540	Bromide	
1575	Chloride	
1730	Fluoride	
1810	Nitrate as N	
1840	Nitrite as N	
1870	Orthophosphate as P	
2000	Sulfate	
EPA 3005A 1	10133207	Acid Digestion of waters for Total Recoverable or Dissolved Metals
<u>Analyte Code</u>	<u>Analyte</u>	
125	Extraction/Preparation	
EPA 3510C 3	10138202	Separatory Funnel Liquid-liquid extraction
<u>Analyte Code</u>	<u>Analyte</u>	
125	Extraction/Preparation	
EPA 5030B 2	10153409	Purge and trap for aqueous samples
<u>Analyte Code</u>	<u>Analyte</u>	
125	Extraction/Preparation	
EPA 6010B 2	10155609	ICP - AES
<u>Analyte Code</u>	<u>Analyte</u>	
1000	Aluminum	
1005	Antimony	
1010	Arsenic	
1015	Barium	
1020	Beryllium	
1025	Boron	
1030	Cadmium	
1035	Calcium	
1040	Chromium	
1050	Cobalt	
1070	Iron	
1075	Lead	
1085	Magnesium	
1090	Manganese	
1100	Molybdenum	
1105	Nickel	
1125	Potassium	
1140	Selenium	
1150	Silver	
1155	Sodium	
1165	Thallium	
1175	Tin	
1180	Titanium	
3035	Uranium	
1185	Vanadium	
1190	Zinc	
EPA 7470A 1	10165807	Mercury in Liquid Waste by Cold Vapor Atomic Absorption
<u>Analyte Code</u>	<u>Analyte</u>	
1095	Mercury	

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Customers: Please verify the current accreditation standing with ORELAP.

EPA 8015B 2		10173601	Non-halogenated organics using GC/FID
<u>Analyte Code</u>	<u>Analyte</u>		
9369	Diesel range organics (DRO)		
9408	Gasoline range organics (GRO)		
102	Motor Oil		
EPA 8021B 2		10174808	Aromatic and Halogenated Volatiles by GC with PID and/or ECD Purge &
<u>Analyte Code</u>	<u>Analyte</u>		
5210	1,2,4-Trimethylbenzene		
5215	1,3,5-Trimethylbenzene		
4375	Benzene		
4765	Ethylbenzene		
5240	m+p-xylene		
5000	Methyl tert-butyl ether (MTBE)		
5250	o-Xylene		
5140	Toluene		
5260	Xylene (total)		
EPA 8081A 1		10178606	Organochlorine Pesticides by GC/ECD
<u>Analyte Code</u>	<u>Analyte</u>		
7355	4,4'-DDD		
7360	4,4'-DDE		
7365	4,4'-DDT		
7025	Aldrin		
7110	alpha-BHC (alpha-Hexachlorocyclohexane)		
7115	beta-BHC (beta-Hexachlorocyclohexane)		
7105	delta-BHC		
7470	Dieldrin		
7510	Endosulfan I		
7515	Endosulfan II		
7520	Endosulfan sulfate		
7540	Endrin		
7530	Endrin aldehyde		
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)		
7685	Heptachlor		
7690	Heptachlor epoxide		
7810	Methoxychlor		
EPA 8082		10179007	Polychlorinated Biphenyls (PCBs) by GC/ECD
<u>Analyte Code</u>	<u>Analyte</u>		
8880	Aroclor-1016 (PCB-1016)		
8885	Aroclor-1221 (PCB-1221)		
8890	Aroclor-1232 (PCB-1232)		
8895	Aroclor-1242 (PCB-1242)		
8900	Aroclor-1248 (PCB-1248)		
8905	Aroclor-1254 (PCB-1254)		
8910	Aroclor-1260 (PCB-1260)		
EPA 8260B 2		10184802	Volatile Organic Compounds by purge and trap GC/MS
<u>Analyte Code</u>	<u>Analyte</u>		
5105	1,1,1,2-Tetrachloroethane		
5160	1,1,1-Trichloroethane		
5110	1,1,2,2-Tetrachloroethane		
5165	1,1,2-Trichloroethane		
4630	1,1-Dichloroethane		

## ORELAP Fields of Accreditation

ORELAPID: NM100001

EPACode: NM00035

### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Suite D  
Albuquerque, NM, 87109

Certificate:

NM100001-009

Issue Date: 3/1/2008

Expiration Date: 2/28/2009

As of 03/01/2008 this list supercedes all previous lists for this certificate number.

Customers: Please verify the current accreditation standing with ORELAP.

4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
6380	1-Methylnaphthalene
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4535	2-Chlorotoluene
4860	2-Hexanone
6385	2-Methylnaphthalene
4540	4-Chlorotoluene
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4400	Bromoform
4950	Bromomethane (Methyl bromide)
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4485	Chloroethane
4505	Chloroform
105	Chloromethane
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4575	Dibromochloromethane
4595	Dibromomethane
4625	Dichlorodifluoromethane
4650	Dichloromethane (DCM, Methylene chloride)
4765	Ethylbenzene
4835	Hexachlorobutadiene
4900	Isopropylbenzene
5240	m+p-xylene
5000	Methyl tert-butyl ether (MTBE)
5005	Naphthalene
4435	n-Butylbenzene
5090	n-Propylbenzene
5250	o-Xylene

## ORELAP Fields of Accreditation

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4910	p-Isopropyltoluene
4440	sec-Butylbenzene
5100	Styrene
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane
5235	Vinyl chloride
5260	Xylene (total)

EPA 8270C 3

10185805

SemiVolatile Organic compounds by GC/MS

<u>Analyte Code</u>	<u>Analyte</u>
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
4615	1,3-Dichlorobenzene
4620	1,4-Dichlorobenzene
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6385	2-Methylnaphthalene
6400	2-Methylphenol (o-Cresol)
6460	2-Nitroaniline
6490	2-Nitrophenol
6412	3 & 4 Methylphenol
5945	3,3'-Dichlorobenzidine
6465	3-Nitroaniline
6140	4,6-Dinitro-2-methylphenol
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6470	4-Nitroaniline
6500	4-Nitrophenol
5500	Acenaphthene
5505	Acenaphthylene
5545	Aniline
5555	Anthracene
123	Azobenzene
5575	Benzo[a]anthracene
5580	Benzo[a]pyrene
5585	Benzo[b]fluoranthene
5590	Benzo[g,h,i]perylene
5600	Benzo[k]fluoranthene



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482	Benzofluoranthene
5610	Benzoic acid
5630	Benzyl alcohol
5765	bis(2-Chloroethyl)ether
5770	bis(2-Chloroethyloxymethane)
5780	bis(2-Chloroisopropyl)ether
6255	bis(2-Ethylhexyl)phthalate (DEHP)
5670	Butyl benzyl phthalate
5680	Carbazole
5855	Chrysene
5895	Dibenz[a,h]anthracene
5905	Dibenzofuran
6070	Diethyl phthalate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6315	Indeno[1,2,3-cd]pyrene
6320	Isophorone
5005	Naphthalene
5015	Nitrobenzene
6535	n-Nitrosodiphenylamine
6540	n-Nitrosodipropylamine
6605	Pentachlorophenol
6615	Phenanthrene
6625	Phenol
6665	Pyrene
5095	Pyridine

EPA 8310

10187607

Polynuclear Aromatic Hydrocarbons by HPLC/UV-VIS

<u>Analyte Code</u>	<u>Analyte</u>
6380	1-Methylnaphthalene
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene
5575	Benzo[a]anthracene
5580	Benzo[a]pyrene
5585	Benzo[b]fluoranthene
5590	Benzo[g,h,i]perylene
5600	Benzo[k]fluoranthene
5855	Chrysene
5895	Dibenz[a,h]anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno[1,2,3-cd]pyrene
5005	Naphthalene
6615	Phenanthrene

## ORELAP Fields of Accreditation

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EPACode: NM00035

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Expiration Date: 2/28/2009

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6665	Pyrene		
SM 2540 C 20th ED		20050004	Total Dissolved Solids
<u>Analyte Code</u>	<u>Analyte</u>		
1955	Residue-filterable (TDS)		
SM 4500-H+ B 20th ED		20104807	pH by Probe
<u>Analyte Code</u>	<u>Analyte</u>		
1900	pH		

# ORELAP Fields of Accreditation

ORELAPID: NM100001

EPA Code: NM00035

## Hall Environmental Analysis Laboratory, Inc.

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MATRIX: Solids		
Reference	Code	Description
EPA 3050A	10135407	Acid Digestion of Sediments, Sludges, and soils
<u>Analyte Code</u>	<u>Analyte</u>	
125	Extraction/Preparation	
EPA 3540C 3	10140202	Soxhlet Extraction
<u>Analyte Code</u>	<u>Analyte</u>	
125	Extraction/Preparation	
EPA 3545	10140804	Pressurized Fluid Extraction (PFE)
<u>Analyte Code</u>	<u>Analyte</u>	
125	Extraction/Preparation	
EPA 5035	10154004	Closed-System Purge-and-Trap and Extraction for Volatile Organics in So
<u>Analyte Code</u>	<u>Analyte</u>	
125	Extraction/Preparation	
EPA 6010B 2	10155609	ICP - AES
<u>Analyte Code</u>	<u>Analyte</u>	
1000	Aluminum	
1005	Antimony	
1010	Arsenic	
1015	Barium	
1020	Beryllium	
1025	Boron	
1030	Cadmium	
1035	Calcium	
1040	Chromium	
1050	Cobalt	
1055	Copper	
1070	Iron	
1075	Lead	
1085	Magnesium	
1090	Manganese	
1100	Molybdenum	
1105	Nickel	
1125	Potassium	
1140	Selenium	
1150	Silver	
1155	Sodium	
1165	Thallium	
1175	Tin	
1180	Titanium	
3035	Uranium	
1185	Vanadium	
1190	Zinc	
EPA 7471A 1	10166208	Mercury in Solid Waste by Cold Vapor Atomic Absorption
<u>Analyte Code</u>	<u>Analyte</u>	
1095	Mercury	
EPA 8015B 2	10173601	Non-halogenated organics using GC/FID
<u>Analyte Code</u>	<u>Analyte</u>	
9369	Diesel range organics (DRO)	
9408	Gasoline range organics (GRO)	
102	Motor Oil	

**ORELAP Fields of Accreditation**

ORELAPID: NM100001

EPACode: NM00035

**Hall Environmental Analysis Laboratory, Inc.**4901 Hawkins Rd. NE, Suite D  
Albuquerque, NM, 87109

Certificate:

NM100001-009

Issue Date: 3/1/2008

Expiration Date: 2/28/2009

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Customers: Please verify the current accreditation standing with ORELAP.

EPA 8021B 2	10174808	Aromatic and Halogenated Volatiles by GC with PID and/or ECD Purge &
<u>Analyte Code</u>	<u>Analyte</u>	
4375	Benzene	
4765	Ethylbenzene	
5240	m+p-xylene	
5000	Methyl tert-butyl ether (MTBE)	
5250	o-Xylene	
5140	Toluene	
5260	Xylene (total)	
EPA 8081A 1	10178606	Organochlorine Pesticides by GC/ECD
<u>Analyte Code</u>	<u>Analyte</u>	
7355	4,4'-DDD	
7360	4,4'-DDE	
7365	4,4'-DDT	
7025	Aldrin	
7110	alpha-BHC (alpha-Hexachlorocyclohexane)	
7115	beta-BHC (beta-Hexachlorocyclohexane)	
7105	delta-BHC	
7470	Dieldrin	
7510	Endosulfan I	
7515	Endosulfan II	
7520	Endosulfan sulfate	
7540	Endrin	
7530	Endrin aldehyde	
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	
7685	Heptachlor	
7690	Heptachlor epoxide	
7810	Methoxychlor	
EPA 8082	10179007	Polychlorinated Biphenyls (PCBs) by GC/ECD
<u>Analyte Code</u>	<u>Analyte</u>	
8880	Aroclor-1016 (PCB-1016)	
8885	Aroclor-1221 (PCB-1221)	
8890	Aroclor-1232 (PCB-1232)	
8895	Aroclor-1242 (PCB-1242)	
8900	Aroclor-1248 (PCB-1248)	
8905	Aroclor-1254 (PCB-1254)	
8910	Aroclor-1260 (PCB-1260)	
EPA 8260B 2	10184802	Volatile Organic Compounds by purge and trap GC/MS
<u>Analyte Code</u>	<u>Analyte</u>	
5105	1,1,1,2-Tetrachloroethane	
5160	1,1,1-Trichloroethane	
5110	1,1,2,2-Tetrachloroethane	
5165	1,1,2-Trichloroethane	
4630	1,1-Dichloroethane	
4640	1,1-Dichloroethylene	
4670	1,1-Dichloropropene	
5150	1,2,3-Trichlorobenzene	
5180	1,2,3-Trichloropropane	
5155	1,2,4-Trichlorobenzene	
5210	1,2,4-Trimethylbenzene	
4570	1,2-Dibromo-3-chloropropane (DBCP)	

## ORELAP Fields of Accreditation

ORELAPID: NM100001  
EPACode: NM00035

### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Suite D  
Albuquerque, NM, 87109

Certificate:  
NM100001-009

Issue Date: 3/1/2008

Expiration Date: 2/28/2009

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Customers: Please verify the current accreditation standing with ORELAP.

4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
6380	1-Methylnaphthalene
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4535	2-Chlorotoluene
4860	2-Hexanone
6385	2-Methylnaphthalene
4540	4-Chlorotoluene
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4400	Bromoform
4950	Bromomethane (Methyl bromide)
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4485	Chloroethane
4505	Chloroform
105	Chloromethane
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4575	Dibromochloromethane
4595	Dibromomethane
4625	Dichlorodifluoromethane
4650	Dichloromethane (DCM, Methylene chloride)
4765	Ethylbenzene
4835	Hexachlorobutadiene
4900	Isopropylbenzene
5240	m+p-xylene
5000	Methyl tert-butyl ether (MTBE)
5005	Naphthalene
4435	n-Butylbenzene
5090	n-Propylbenzene
5250	o-Xylene
4910	p-Isopropyltoluene
4440	sec-Butylbenzene
5100	Styrene
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5140	Toluene
4700	trans-1,2-Dichloroethylene

## ORELAP Fields of Accreditation

ORELAPID: NM100001

EPACode: NM00035

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4685	trans-1,3-Dichloropropylene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane
5235	Vinyl chloride
5260	Xylene (total)

EPA 8270C 3 10185805 SemiVolatile Organic compounds by GC/MS

<u>Analyte Code</u>	<u>Analyte</u>
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
4615	1,3-Dichlorobenzene
4620	1,4-Dichlorobenzene
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6385	2-Methylnaphthalene
6400	2-Methylphenol (o-Cresol)
6460	2-Nitroaniline
6490	2-Nitrophenol
6412	3 & 4 Methylphenol
5945	3,3'-Dichlorobenzidine
6465	3-Nitroaniline
6140	4,6-Dinitro-2-methylphenol
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6470	4-Nitroaniline
6500	4-Nitrophenol
5500	Acenaphthene
5505	Acenaphthylene
5545	Aniline
5555	Anthracene
123	Azobenzene
5575	Benzo[a]anthracene
5580	Benzo[a]pyrene
5585	Benzo[b]fluoranthene
5590	Benzo[g,h,i]perylene
5600	Benzo[k]fluoranthene
5610	Benzoic acid
5630	Benzyl alcohol
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl)ether
5780	bis(2-Chloroisopropyl)ether
6255	bis(2-Ethylhexyl)phthalate (DEHP)
5670	Butyl benzyl phthalate



## ORELAP Fields of Accreditation

ORELAPID: NM100001

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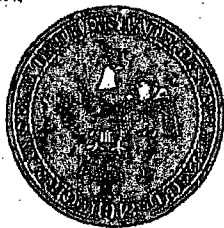
5680	Carbazole
5855	Chrysene
5895	Dibenz[a,h]anthracene
5905	Dibenzofuran
6070	Diethyl phthalate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6315	Indeno[1,2,3-cd]pyrene
6320	Isophorone
5005	Naphthalene
5015	Nitrobenzene
6530	n-Nitrosodimethylamine
6535	n-Nitrosodiphenylamine
6540	n-Nitrosodipropylamine
6605	Pentachlorophenol
6615	Phenanthrene
6625	Phenol
6665	Pyrene
5095	Pyridine

EPA 8310

10187607

Polynuclear Aromatic Hydrocarbons by HPLC/UV-VIS

<u>Analyte Code</u>	<u>Analyte</u>
6380	1-Methylnaphthalene
6385	2-Methylnaphthalene
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene
5575	Benzo[a]anthracene
5580	Benzo[a]pyrene
5585	Benzo[b]fluoranthene
5590	Benzo[g,h,i]perylene
5600	Benzo[k]fluoranthene
5855	Chrysene
5895	Dibenz[a,h]anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno[1,2,3-cd]pyrene
5005	Naphthalene
6615	Phenanthrene
6665	Pyrene



**BILL RICHARDSON**  
GOVERNOR

State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
*Field Operations Division*  
*Drinking Water Bureau*  
**525 Camino de Los Marquez**  
**Santa Fe, New Mexico 87501**  
**Telephone (505) 476-8620**  
**Fax (505) 476-8658**



**RON CURRY**  
SECRETARY

**Cindy Padilla**  
Deputy Secretary

March 11, 2008

Hall Environmental Analysis Laboratory Inc.  
4901 Hawkins Rd. NE, Suite D  
Albuquerque, NM 87109

Dear Mr. Freeman

The Drinking Water Bureau of the New Mexico Environment Department (NMED-DWB) has received and reviewed your Nelap certification /accreditation information from the state of Oregon. The documentation is acceptable and your New Mexico certification is now valid through February 29, 2009.

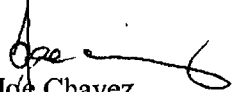
This certification is to perform drinking water analysis in compliance with the Federal Safe Drinking Water Act, pursuant 40CFR Part 141, and the New Mexico Environment Department Drinking Water Regulations for the Primary Regulated contaminants, including Contaminants in as listed in your Oregon Scope Accreditation.

You must advise NMED-DWB of any change in your accreditation by the State of Oregon and continue to provide this office with performance evaluation results. You are also required to provide evidence of renewal of accreditation by the state of Oregon to continue certification past February 29, 2009.

Laboratories certified by the New Mexico can be purged from the list if there is no evidence that they are performing drinking water compliance samples analysis for public water supply systems in New Mexico.

IF you have any questions or require additional information, please contact me at 505-476-8635.

Sincerely,

  
Joe Chavez



**BILL RICHARDSON**  
GOVERNOR

State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
*Field Operations Division*  
*Drinking Water Bureau*  
**525 Camino de Los Marquez**  
**Santa Fe, New Mexico 87501**  
**Telephone (505) 476-8620**  
**Fax (505) 476-8658**



**RON CURRY**  
SECRETARY

**Cindy Padilla**  
Deputy Secretary

March 11, 2008

Hall Environmental Analysis Laboratory Inc.  
4901 Hawkins Rd. NE, Suite D  
Albuquerque, NM 87109

Dear Mr. Freeman

The Drinking Water Bureau of the New Mexico Environment Department (NMED-DWB) has received and reviewed your Nelap certification /accreditation information from the state of Oregon. The documentation is acceptable and your New Mexico certification is now valid through February 29, 2009.

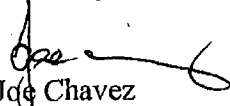
This certification is to perform drinking water analysis in compliance with the Federal Safe Drinking Water Act, pursuant 40CFR Part 141, and the New Mexico Environment Department Drinking Water Regulations for the Primary Regulated contaminants, including Contaminants in as listed in your Oregon Scope Accreditation.

You must advise NMED-DWB of any change in your accreditation by the State of Oregon and continue to provide this office with performance evaluation results. You are also required to provide evidence of renewal of accreditation by the state of Oregon to continue certification past February 29, 2009.

Laboratories certified by the New Mexico can be purged from the list if there is no evidence that they are performing drinking water compliance samples analysis for public water supply systems in New Mexico.

IF you have any questions or require additional information, please contact me at 505-476-8635.

Sincerely,

  
Joe Chavez

## Section 17.0 Chemical Analytical Reports

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## COVER LETTER

Thursday, April 24, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: Semi-Annual 2008

Order No.: 0804105

Dear Cindy Hurtado:

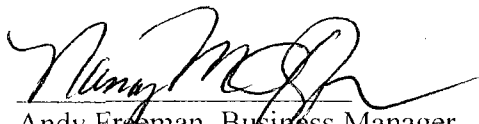
Hall Environmental Analysis Laboratory, Inc. received 12 sample(s) on 4/9/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

  
Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



CLIENT: San Juan Refining  
Project: Semi-Annual 2008  
Lab Order: 0804105

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0804105-01A	MW #1	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 10:10:00 AM
0804105-01A	MW #1	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 10:10:00 AM
0804105-01A	MW #1	15612	EPA Method 8015B: Diesel Range	4/8/2008 10:10:00 AM
0804105-02A	MW #1FD	15612	EPA Method 8015B: Diesel Range	4/8/2008 10:20:00 AM
0804105-02A	MW #1FD	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 10:20:00 AM
0804105-02A	MW #1FD	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 10:20:00 AM
0804105-03A	MW #8	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 10:40:00 AM
0804105-03A	MW #8	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 10:40:00 AM
0804105-03A	MW #8	15612	EPA Method 8015B: Diesel Range	4/8/2008 10:40:00 AM
0804105-04A	MW #30	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 11:05:00 AM
0804105-04A	MW #30	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 11:05:00 AM
0804105-04A	MW #30	15612	EPA Method 8015B: Diesel Range	4/8/2008 11:05:00 AM
0804105-05A	MW #13	15612	EPA Method 8015B: Diesel Range	4/8/2008 12:30:00 PM
0804105-05A	MW #13	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 12:30:00 PM
0804105-05A	MW #13	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 12:30:00 PM
0804105-06A	MW #12	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 1:20:00 PM
0804105-06A	MW #12	15612	EPA Method 8015B: Diesel Range	4/8/2008 1:20:00 PM
0804105-06A	MW #12	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 1:20:00 PM
0804105-07A	MW #35	15612	EPA Method 8015B: Diesel Range	4/8/2008 1:40:00 PM
0804105-07A	MW #35	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 1:40:00 PM
0804105-07A	MW #35	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 1:40:00 PM
0804105-08A	MW #37	15612	EPA Method 8015B: Diesel Range	4/8/2008 1:50:00 PM
0804105-08A	MW #37	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 1:50:00 PM
0804105-08A	MW #37	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 1:50:00 PM
0804105-09A	MW #38	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 2:05:00 PM
0804105-09A	MW #38	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 2:05:00 PM
0804105-09A	MW #38	15612	EPA Method 8015B: Diesel Range	4/8/2008 2:05:00 PM
0804105-10A	MW #33	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 2:20:00 PM
0804105-10A	MW #33	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 2:20:00 PM
0804105-10A	MW #33	15612	EPA Method 8015B: Diesel Range	4/8/2008 2:20:00 PM
0804105-11A	Field Blank	15612	EPA Method 8015B: Diesel Range	4/8/2008 3:00:00 PM
0804105-11A	Field Blank	R28092	EPA Method 8015B: Gasoline Range	4/8/2008 3:00:00 PM
0804105-11A	Field Blank	R28171	EPA Method 8260: Volatiles Short List	4/8/2008 3:00:00 PM
0804105-12A	Trip Blank	R28171	EPA Method 8260: Volatiles Short List	
0804105-12A	Trip Blank	R28092	EPA Method 8015B: Gasoline Range	



**Hall Environmental Analysis Laboratory, Inc.**

**Date:** 24-Apr-08

**CLIENT:** San Juan Refining  
**Project:** Semi-Annual 2008  
**Lab Order:** 0804105

**CASE NARRATIVE**

Analytical Comments for METHOD 8015GRO\_W, SAMPLE 0804105-08A: Elevated surrogate due to matrix interference.

# Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0804105  
Project: Semi-Annual 2008  
Lab ID: 0804105-01

Client Sample ID: MW #1  
Collection Date: 4/8/2008 10:10:00 AM  
Date Received: 4/9/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/11/2008 12:46:13 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 12:46:13 PM
Surr: DNOP	109	58-140		%REC	1	4/11/2008 12:46:13 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	0.21	0.050		mg/L	1	4/14/2008 11:11:58 PM
Surr: BFB	97.1	79.2-121		%REC	1	4/14/2008 11:11:58 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 1:20:02 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 1:20:02 PM
Ethylbenzene	2.3	1.0		µg/L	1	4/18/2008 1:20:02 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	4/18/2008 1:20:02 PM
Xylenes, Total	16	3.0		µg/L	1	4/18/2008 1:20:02 PM
Surr: 4-Bromofluorobenzene	98.7	80.4-119		%REC	1	4/18/2008 1:20:02 PM
Surr: Toluene-d8	104	53.5-136		%REC	1	4/18/2008 1:20:02 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0804105  
Project: Semi-Annual 2008  
Lab ID: 0804105-02

Client Sample ID: MW #1FD  
Collection Date: 4/8/2008 10:20:00 AM  
Date Received: 4/9/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/11/2008 1:20:19 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 1:20:19 PM
Surr: DNOP	106	58-140		%REC	1	4/11/2008 1:20:19 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	0.24	0.050		mg/L	1	4/14/2008 11:42:00 PM
Surr: BFB	107	79.2-121		%REC	1	4/14/2008 11:42:00 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 1:48:49 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 1:48:49 PM
Ethylbenzene	2.3	1.0		µg/L	1	4/18/2008 1:48:49 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	4/18/2008 1:48:49 PM
Xylenes, Total	17	3.0		µg/L	1	4/18/2008 1:48:49 PM
Surr: 4-Bromofluorobenzene	91.1	80.4-119		%REC	1	4/18/2008 1:48:49 PM
Surr: Toluene-d8	105	53.5-136		%REC	1	4/18/2008 1:48:49 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0804105  
Project: Semi-Annual 2008  
Lab ID: 0804105-03

Client Sample ID: MW #8  
Collection Date: 4/8/2008 10:40:00 AM  
Date Received: 4/9/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/11/2008 1:54:10 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 1:54:10 PM
Surr: DNOP	98.1	58-140		%REC	1	4/11/2008 1:54:10 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 12:12:06 AM
Surr: BFB	98.5	79.2-121		%REC	1	4/15/2008 12:12:06 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 2:17:44 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 2:17:44 PM
Ethylbenzene	ND	1.0		µg/L	1	4/18/2008 2:17:44 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	4/18/2008 2:17:44 PM
Xylenes, Total	ND	3.0		µg/L	1	4/18/2008 2:17:44 PM
Surr: 4-Bromofluorobenzene	101	80.4-119		%REC	1	4/18/2008 2:17:44 PM
Surr: Toluene-d8	96.4	53.5-136		%REC	1	4/18/2008 2:17:44 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804105  
**Project:** Semi-Annual 2008  
**Lab ID:** 0804105-04

**Client Sample ID:** MW #30  
**Collection Date:** 4/8/2008 11:05:00 AM  
**Date Received:** 4/9/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	7.3	1.0		mg/L	1	4/11/2008 2:28:04 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 2:28:04 PM
Surr: DNOP	107	58-140		%REC	1	4/11/2008 2:28:04 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	68	1.0		mg/L	20	4/15/2008 12:44:44 AM
Surr: BFB	116	79.2-121		%REC	20	4/15/2008 12:44:44 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	6000	100		µg/L	100	4/18/2008 2:48:12 PM
Toluene	2400	100		µg/L	100	4/18/2008 2:48:12 PM
Ethylbenzene	3500	100		µg/L	100	4/18/2008 2:48:12 PM
Methyl tert-butyl ether (MTBE)	ND	150		µg/L	100	4/18/2008 2:48:12 PM
Xylenes, Total	13000	300		µg/L	100	4/18/2008 2:48:12 PM
Surr: 4-Bromofluorobenzene	97.2	80.4-119		%REC	100	4/18/2008 2:48:12 PM
Surr: Toluene-d8	101	53.5-136		%REC	100	4/18/2008 2:48:12 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0804105  
Project: Semi-Annual 2008  
Lab ID: 0804105-05

Client Sample ID: MW #13  
Collection Date: 4/8/2008 12:30:00 PM  
Date Received: 4/9/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/11/2008 5:17:06 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 5:17:06 PM
Surr: DNOP	114	58-140		%REC	1	4/11/2008 5:17:06 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 1:45:01 AM
Surr: BFB	106	79.2-121		%REC	1	4/15/2008 1:45:01 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 3:17:13 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 3:17:13 PM
Ethylbenzene	ND	1.0		µg/L	1	4/18/2008 3:17:13 PM
Methyl tert-butyl ether (MTBE)	3.2	1.5		µg/L	1	4/18/2008 3:17:13 PM
Xylenes, Total	ND	3.0		µg/L	1	4/18/2008 3:17:13 PM
Surr: 4-Bromofluorobenzene	104	80.4-119		%REC	1	4/18/2008 3:17:13 PM
Surr: Toluene-d8	103	53.5-136		%REC	1	4/18/2008 3:17:13 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0804105  
Project: Semi-Annual 2008  
Lab ID: 0804105-06

Client Sample ID: MW #12  
Collection Date: 4/8/2008 1:20:00 PM  
Date Received: 4/9/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/11/2008 5:50:57 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 5:50:57 PM
Surr: DNOP	108	58-140		%REC	1	4/11/2008 5:50:57 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 2:15:08 AM
Surr: BFB	93.2	79.2-121		%REC	1	4/15/2008 2:15:08 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 3:46:14 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 3:46:14 PM
Ethylbenzene	ND	1.0		µg/L	1	4/18/2008 3:46:14 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	4/18/2008 3:46:14 PM
Xylenes, Total	ND	3.0		µg/L	1	4/18/2008 3:46:14 PM
Surr: 4-Bromofluorobenzene	98.7	80.4-119		%REC	1	4/18/2008 3:46:14 PM
Surr: Toluene-d8	100	53.5-136		%REC	1	4/18/2008 3:46:14 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804105  
**Project:** Semi-Annual 2008  
**Lab ID:** 0804105-07

**Client Sample ID:** MW #35  
**Collection Date:** 4/8/2008 1:40:00 PM  
**Date Received:** 4/9/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	2.1	1.0		mg/L	1	4/11/2008 6:25:01 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 6:25:01 PM
Surr: DNOP	103	58-140		%REC	1	4/11/2008 6:25:01 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	0.52	0.050		mg/L	1	4/15/2008 2:45:08 AM
Surr: BFB	121	79.2-121		%REC	1	4/15/2008 2:45:08 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 4:18:34 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 4:18:34 PM
Ethylbenzene	ND	1.0		µg/L	1	4/18/2008 4:18:34 PM
Methyl tert-butyl ether (MTBE)	1.8	1.5		µg/L	1	4/18/2008 4:18:34 PM
Xylenes, Total	ND	3.0		µg/L	1	4/18/2008 4:18:34 PM
Surr: 4-Bromofluorobenzene	92.6	80.4-119		%REC	1	4/18/2008 4:18:34 PM
Surr: Toluene-d8	101	53.5-136		%REC	1	4/18/2008 4:18:34 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0804105  
Project: Semi-Annual 2008  
Lab ID: 0804105-08

Client Sample ID: MW #37  
Collection Date: 4/8/2008 1:50:00 PM  
Date Received: 4/9/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	2.3	1.0		mg/L	1	4/11/2008 6:58:51 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 6:58:51 PM
Surr: DNOP	105	58-140		%REC	1	4/11/2008 6:58:51 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	0.15	0.050		mg/L	1	4/15/2008 3:45:24 AM
Surr: BFB	124	79.2-121	S	%REC	1	4/15/2008 3:45:24 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 4:47:48 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 4:47:48 PM
Ethylbenzene	ND	1.0		µg/L	1	4/18/2008 4:47:48 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	4/18/2008 4:47:48 PM
Xylenes, Total	ND	3.0		µg/L	1	4/18/2008 4:47:48 PM
Surr: 4-Bromofluorobenzene	103	80.4-119		%REC	1	4/18/2008 4:47:48 PM
Surr: Toluene-d8	99.2	53.5-136		%REC	1	4/18/2008 4:47:48 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804105  
**Project:** Semi-Annual 2008  
**Lab ID:** 0804105-09

**Client Sample ID:** MW #38  
**Collection Date:** 4/8/2008 2:05:00 PM  
**Date Received:** 4/9/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	1.2	1.0		mg/L	1	4/11/2008 7:32:42 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 7:32:42 PM
Surr: DNOP	113	58-140		%REC	1	4/11/2008 7:32:42 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	0.073	0.050		mg/L	1	4/15/2008 4:15:26 AM
Surr: BFB	110	79.2-121		%REC	1	4/15/2008 4:15:26 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 5:16:40 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 5:16:40 PM
Ethylbenzene	ND	1.0		µg/L	1	4/18/2008 5:16:40 PM
Methyl tert-butyl ether (MTBE)	2.4	1.5		µg/L	1	4/18/2008 5:16:40 PM
Xylenes, Total	ND	3.0		µg/L	1	4/18/2008 5:16:40 PM
Surr: 4-Bromofluorobenzene	103	80.4-119		%REC	1	4/18/2008 5:16:40 PM
Surr: Toluene-d8	101	53.5-136		%REC	1	4/18/2008 5:16:40 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
 Lab Order: 0804105  
 Project: Semi-Annual 2008  
 Lab ID: 0804105-10

Client Sample ID: MW #33  
 Collection Date: 4/8/2008 2:20:00 PM  
 Date Received: 4/9/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/11/2008 8:06:36 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 8:06:36 PM
Surr: DNOP	101	58-140		%REC	1	4/11/2008 8:06:36 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 4:45:33 AM
Surr: BFB	98.6	79.2-121		%REC	1	4/15/2008 4:45:33 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 5:45:40 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 5:45:40 PM
Ethylbenzene	ND	1.0		µg/L	1	4/18/2008 5:45:40 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	4/18/2008 5:45:40 PM
Xylenes, Total	ND	3.0		µg/L	1	4/18/2008 5:45:40 PM
Surr: 4-Bromofluorobenzene	103	80.4-119		%REC	1	4/18/2008 5:45:40 PM
Surr: Toluene-d8	96.9	53.5-136		%REC	1	4/18/2008 5:45:40 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
 Lab Order: 0804105  
 Project: Semi-Annual 2008  
 Lab ID: 0804105-11

Client Sample ID: Field Blank  
 Collection Date: 4/8/2008 3:00:00 PM  
 Date Received: 4/9/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/11/2008 8:40:27 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 8:40:27 PM
Surr: DNOP	115	58-140		%REC	1	4/11/2008 8:40:27 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 5:15:34 AM
Surr: BFB	97.6	79.2-121		%REC	1	4/15/2008 5:15:34 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 6:14:44 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 6:14:44 PM
Ethylbenzene	ND	1.0		µg/L	1	4/18/2008 6:14:44 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	4/18/2008 6:14:44 PM
Xylenes, Total	ND	3.0		µg/L	1	4/18/2008 6:14:44 PM
Surr: 4-Bromofluorobenzene	98.1	80.4-119		%REC	1	4/18/2008 6:14:44 PM
Surr: Toluene-d8	102	53.5-136		%REC	1	4/18/2008 6:14:44 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining

Client Sample ID: Trip Blank

Lab Order: 0804105

Collection Date:

Project: Semi-Annual 2008

Date Received: 4/9/2008

Lab ID: 0804105-12

Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 5:45:43 AM
Surr: BFB	104	79.2-121		%REC	1	4/15/2008 5:45:43 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/18/2008 6:44:03 PM
Toluene	ND	1.0		µg/L	1	4/18/2008 6:44:03 PM
Ethylbenzene	ND	1.0		µg/L	1	4/18/2008 6:44:03 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	4/18/2008 6:44:03 PM
Xylenes, Total	ND	3.0		µg/L	1	4/18/2008 6:44:03 PM
Surr: 4-Bromofluorobenzene	96.3	80.4-119		%REC	1	4/18/2008 6:44:03 PM
Surr: Toluene-d8	102	53.5-136		%REC	1	4/18/2008 6:44:03 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit



## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: Semi-Annual 2008

Work Order: 0804105

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 8015B: Diesel Range</b>									
Sample ID: MB-15612		MBLK			Batch ID: 15612		Analysis Date: 4/10/2008 9:05:46 PM		
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Surr: DNOP	1.186	mg/L	0	119	58	140			
Sample ID: LCS-15612		LCS			Batch ID: 15612		Analysis Date: 4/10/2008 9:39:29 PM		
Diesel Range Organics (DRO)	4.803	mg/L	1.0	96.1	74	157			
Surr: DNOP	0.5455	mg/L	0	109	58	140			
Sample ID: LCSD-15612		LCSD			Batch ID: 15612		Analysis Date: 4/10/2008 10:13:21 PM		
Diesel Range Organics (DRO)	5.257	mg/L	1.0	105	74	157	9.04	23	
Surr: DNOP	0.5708	mg/L	0	114	58	140	0	0	
<b>Method: EPA Method 8015B: Gasoline Range</b>									
Sample ID: 5ML RB		MBLK			Batch ID: R28092		Analysis Date: 4/14/2008 9:08:40 AM		
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	18.80	mg/L	0	94.0	79.2	121			
Sample ID: 2.5UG GRO LCS		LCS			Batch ID: R28092		Analysis Date: 4/14/2008 9:11:39 PM		
Gasoline Range Organics (GRO)	0.5128	mg/L	0.050	103	80	115			
Surr: BFB	19.29	mg/L	0	96.5	79.2	121			
Sample ID: 0804099-01A DUP		DUP			Batch ID: R28092		Analysis Date: 4/14/2008 1:09:50 PM		
Gasoline Range Organics (GRO)	52.04	mg/L	5.0				1.98	20	
Surr: BFB	2091	mg/L	0	105	84.5	129	0	0	
<b>Method: EPA Method 8260: Volatiles Short List</b>									
Sample ID: 5ml rb		MBLK			Batch ID: R28171		Analysis Date: 4/18/2008 8:27:05 AM		
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 4-Bromofluorobenzene	10.74	µg/L	0	107	80.4	119			
Surr: Toluene-d8	10.01	µg/L	0	100	53.5	136			
Sample ID: 100ng lcs		LCS			Batch ID: R28171		Analysis Date: 4/18/2008 10:23:16 AM		
Benzene	21.25	µg/L	1.0	106	72.4	126			
Toluene	17.22	µg/L	1.0	86.1	69.4	126			
Surr: 4-Bromofluorobenzene	10.47	µg/L	0	105	80.4	119			
Surr: Toluene-d8	9.572	µg/L	0	95.7	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

4/9/2008

Work Order Number 0804105

Received by: TLS

Checklist completed by:

Signature

4/9/08  
Date

Sample ID labels checked by

Initials

TS

Matrix

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

5°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding

Comments:

Corrective Action



COVER LETTER

Friday, May 02, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: San Juan River Bluff Semi-Annual-2008

Order No.: 0804103

Dear Cindy Hurtado:

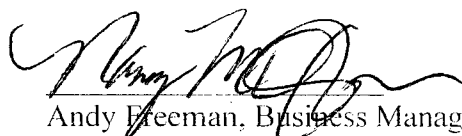
Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 4/9/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 02-May-08

**CLIENT:** San Juan Refining  
**Project:** San Juan River Bluff Semi-Annual-2008  
**Lab Order:** 0804103

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0804103-01A	Outfall #3	R28104	EPA Method 8015B: Gasoline Range	4/8/2008 2:55:00 PM
0804103-01A	Outfall #3	R28141	EPA Method 8260: Volatiles Short List	4/8/2008 2:55:00 PM
0804103-01A	Outfall #3	15612	EPA Method 8015B: Diesel Range	4/8/2008 2:55:00 PM
0804103-01C	Outfall #3	15622	EPA 6010B: Total Recoverable Metals	4/8/2008 2:55:00 PM
0804103-01C	Outfall #3	15677	EPA Method 7470: Mercury	4/8/2008 2:55:00 PM
0804103-01D	Outfall #3	R28042	EPA Method 300.0: Anions	4/8/2008 2:55:00 PM
0804103-01D	Outfall #3	R28042	EPA Method 300.0: Anions	4/8/2008 2:55:00 PM
0804103-01D	Outfall #3	R28060	EPA 120.1: Specific Conductance	4/8/2008 2:55:00 PM
0804103-01D	Outfall #3	R28064	SM4500-H+B: pH	4/8/2008 2:55:00 PM
0804103-01D	Outfall #3	15621	SM 2540C: TDS	4/8/2008 2:55:00 PM
0804103-01D	Outfall #3	R28122	SM 2320B: Alkalinity	4/8/2008 2:55:00 PM
0804103-01D	Outfall #3	R28188	Carbon Dioxide	4/8/2008 2:55:00 PM
0804103-01E	Outfall #3	R28106	EPA Method 6010B: Dissolved Metals	4/8/2008 2:55:00 PM
0804103-01E	Outfall #3	R28080	EPA Method 6010B: Dissolved Metals	4/8/2008 2:55:00 PM
0804103-02A	Outfall #2	R28104	EPA Method 8015B: Gasoline Range	4/8/2008 3:05:00 PM
0804103-02A	Outfall #2	R28141	EPA Method 8260: Volatiles Short List	4/8/2008 3:05:00 PM
0804103-02A	Outfall #2	15612	EPA Method 8015B: Diesel Range	4/8/2008 3:05:00 PM
0804103-02C	Outfall #2	15622	EPA 6010B: Total Recoverable Metals	4/8/2008 3:05:00 PM
0804103-02C	Outfall #2	15677	EPA Method 7470: Mercury	4/8/2008 3:05:00 PM
0804103-02D	Outfall #2	R28042	EPA Method 300.0: Anions	4/8/2008 3:05:00 PM
0804103-02D	Outfall #2	R28042	EPA Method 300.0: Anions	4/8/2008 3:05:00 PM
0804103-02D	Outfall #2	R28060	EPA 120.1: Specific Conductance	4/8/2008 3:05:00 PM
0804103-02D	Outfall #2	R28064	SM4500-H+B: pH	4/8/2008 3:05:00 PM
0804103-02D	Outfall #2	15621	SM 2540C: TDS	4/8/2008 3:05:00 PM
0804103-02D	Outfall #2	R28122	SM 2320B: Alkalinity	4/8/2008 3:05:00 PM
0804103-02D	Outfall #2	R28188	Carbon Dioxide	4/8/2008 3:05:00 PM
0804103-02E	Outfall #2	R28106	EPA Method 6010B: Dissolved Metals	4/8/2008 3:05:00 PM
0804103-02E	Outfall #2	R28080	EPA Method 6010B: Dissolved Metals	4/8/2008 3:05:00 PM
0804103-02E	Outfall #2	R28080	EPA Method 6010B: Dissolved Metals	4/8/2008 3:05:00 PM
0804103-02E	Outfall #2	R28106	EPA Method 6010B: Dissolved Metals	4/8/2008 3:05:00 PM

# Hall Environmental Analysis Laboratory, Inc.

Date: 02-May-08

CLIENT: San Juan Refining  
Lab Order: 0804103  
Project: San Juan River Bluff Semi-Annual-2008  
Lab ID: 0804103-01

Client Sample ID: Outfall #3  
Collection Date: 4/8/2008 2:55:00 PM  
Date Received: 4/9/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/11/2008 9:22:46 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 9:22:46 AM
Surr: DNOP	106	58-140		%REC	1	4/11/2008 9:22:46 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 9:09:49 PM
Surr: BFB	103	79.2-121		%REC	1	4/15/2008 9:09:49 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.48	0.10		mg/L	1	4/9/2008 1:06:56 PM
Chloride	23	0.10		mg/L	1	4/9/2008 1:06:56 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/9/2008 1:06:56 PM
Bromide	0.15	0.10		mg/L	1	4/9/2008 1:06:56 PM
Nitrogen, Nitrate (As N)	2.8	0.10		mg/L	1	4/9/2008 1:06:56 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/9/2008 1:06:56 PM
Sulfate	170	5.0		mg/L	10	4/9/2008 1:24:20 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	4/17/2008 3:32:55 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	4/15/2008 5:04:57 PM
Barium	0.034	0.020		mg/L	1	4/15/2008 5:04:57 PM
Cadmium	ND	0.0020		mg/L	1	4/15/2008 5:04:57 PM
Calcium	88	1.0		mg/L	1	4/15/2008 5:04:57 PM
Chromium	ND	0.0060		mg/L	1	4/15/2008 5:04:57 PM
Copper	ND	0.0060		mg/L	1	4/15/2008 5:04:57 PM
Iron	ND	0.020		mg/L	1	4/15/2008 5:04:57 PM
Lead	ND	0.0050		mg/L	1	4/15/2008 5:04:57 PM
Magnesium	20	1.0		mg/L	1	4/15/2008 5:04:57 PM
Manganese	ND	0.0020		mg/L	1	4/15/2008 5:04:57 PM
Potassium	1.8	1.0		mg/L	1	4/15/2008 5:04:57 PM
Selenium	ND	0.050		mg/L	1	4/15/2008 5:04:57 PM
Silver	ND	0.0050		mg/L	1	4/15/2008 5:04:57 PM
Sodium	87	1.0		mg/L	1	4/15/2008 5:04:57 PM
Uranium	ND	0.10		mg/L	1	4/15/2008 5:04:57 PM
Zinc	0.068	0.050		mg/L	1	4/15/2008 5:04:57 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	4/12/2008 1:44:51 PM
Barium	0.033	0.020		mg/L	1	4/12/2008 1:44:51 PM
Cadmium	ND	0.0020		mg/L	1	4/12/2008 1:44:51 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 02-May-08

<b>CLIENT:</b>	San Juan Refining	<b>Client Sample ID:</b>	Outfall #3
<b>Lab Order:</b>	0804103	<b>Collection Date:</b>	4/8/2008 2:55:00 PM
<b>Project:</b>	San Juan River Bluff Semi-Annual-2008	<b>Date Received:</b>	4/9/2008
<b>Lab ID:</b>	0804103-01	<b>Matrix:</b>	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Chromium	ND	0.0060		mg/L	1	4/12/2008 1:44:51 PM
Lead	ND	0.0050		mg/L	1	4/12/2008 1:44:51 PM
Selenium	ND	0.050		mg/L	1	4/12/2008 1:44:51 PM
Silver	ND	0.0050		mg/L	1	4/12/2008 1:44:51 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/17/2008 5:19:32 PM
Toluene	ND	1.0		µg/L	1	4/17/2008 5:19:32 PM
Ethylbenzene	ND	1.0		µg/L	1	4/17/2008 5:19:32 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	4/17/2008 5:19:32 PM
Xylenes, Total	ND	3.0		µg/L	1	4/17/2008 5:19:32 PM
Surr: 4-Bromofluorobenzene	104	80.4-119		%REC	1	4/17/2008 5:19:32 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO <sub>3</sub> )	280	20		mg/L CaCO <sub>3</sub>	1	4/15/2008
Carbonate	ND	2.0		mg/L CaCO <sub>3</sub>	1	4/15/2008
Bicarbonate	280	20		mg/L CaCO <sub>3</sub>	1	4/15/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	260	1.0		mg CO <sub>2</sub> /L	1	4/22/2008
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: TAF
Specific Conductance	920	0.010		µmhos/cm	1	4/11/2008
<b>SM4500-H+B: PH</b>						Analyst: SNV
pH	7.40	0.1		pH units	1	4/11/2008
<b>SM 2540C: TDS</b>						Analyst: TAF
Total Dissolved Solids	610	20		mg/L	1	4/11/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 02-May-08

CLIENT: San Juan Refining  
Lab Order: 0804103  
Project: San Juan River Bluff Semi-Annual-2008  
Lab ID: 0804103-02

Client Sample ID: Outfall #2  
Collection Date: 4/8/2008 3:05:00 PM  
Date Received: 4/9/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/11/2008 9:56:51 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/11/2008 9:56:51 AM
Surr: DNOP	116	58-140		%REC	1	4/11/2008 9:56:51 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 9:39:51 PM
Surr: BFB	98.7	79.2-121		%REC	1	4/15/2008 9:39:51 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.70	0.10		mg/L	1	4/9/2008 1:41:44 PM
Chloride	14	0.10		mg/L	1	4/9/2008 1:41:44 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/9/2008 1:41:44 PM
Bromide	ND	0.10		mg/L	1	4/9/2008 1:41:44 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/9/2008 1:41:44 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/9/2008 1:41:44 PM
Sulfate	110	5.0		mg/L	10	4/9/2008 1:59:09 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	4/17/2008 3:02:04 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	4/15/2008 5:07:52 PM
Barium	0.042	0.020		mg/L	1	4/15/2008 5:07:52 PM
Cadmium	ND	0.0020		mg/L	1	4/15/2008 5:07:52 PM
Calcium	92	1.0		mg/L	1	4/15/2008 5:07:52 PM
Chromium	ND	0.0060		mg/L	1	4/15/2008 5:07:52 PM
Copper	ND	0.0060		mg/L	1	4/15/2008 5:07:52 PM
Iron	ND	0.020		mg/L	1	4/15/2008 5:07:52 PM
Lead	ND	0.0050		mg/L	1	4/15/2008 5:07:52 PM
Magnesium	21	1.0		mg/L	1	4/15/2008 5:07:52 PM
Manganese	0.0023	0.0020		mg/L	1	4/15/2008 5:07:52 PM
Potassium	1.9	1.0		mg/L	1	4/15/2008 5:07:52 PM
Selenium	ND	0.050		mg/L	1	4/15/2008 5:07:52 PM
Silver	ND	0.0050		mg/L	1	4/15/2008 5:07:52 PM
Sodium	70	1.0		mg/L	1	4/15/2008 5:07:52 PM
Uranium	ND	0.10		mg/L	1	4/15/2008 5:07:52 PM
Zinc	ND	0.050		mg/L	1	4/15/2008 5:07:52 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	4/12/2008 1:47:21 PM
Barium	0.039	0.020		mg/L	1	4/12/2008 1:47:21 PM
Cadmium	ND	0.0020		mg/L	1	4/12/2008 1:47:21 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 02-May-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804103  
**Project:** San Juan River Bluff Semi-Annual-2008  
**Lab ID:** 0804103-02

**Client Sample ID:** Outfall #2  
**Collection Date:** 4/8/2008 3:05:00 PM  
**Date Received:** 4/9/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Chromium	ND	0.0060		mg/L	1	4/12/2008 1:47:21 PM
Lead	ND	0.0050		mg/L	1	4/12/2008 1:47:21 PM
Selenium	ND	0.050		mg/L	1	4/12/2008 1:47:21 PM
Silver	ND	0.0050		mg/L	1	4/12/2008 1:47:21 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/17/2008 5:48:50 PM
Toluene	ND	1.0		µg/L	1	4/17/2008 5:48:50 PM
Ethylbenzene	ND	1.0		µg/L	1	4/17/2008 5:48:50 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	4/17/2008 5:48:50 PM
Xylenes, Total	ND	3.0		µg/L	1	4/17/2008 5:48:50 PM
Surr: 4-Bromofluorobenzene	99.9	80.4-119		%REC	1	4/17/2008 5:48:50 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO <sub>3</sub> )	360	20		mg/L CaCO <sub>3</sub>	1	4/15/2008
Carbonate	ND	2.0		mg/L CaCO <sub>3</sub>	1	4/15/2008
Bicarbonate	360	20		mg/L CaCO <sub>3</sub>	1	4/15/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	320	1.0		mg CO <sub>2</sub> /L	1	4/22/2008
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: TAF
Specific Conductance	880	0.010		µmhos/cm	1	4/11/2008
<b>SM4500-H+B: PH</b>						Analyst: SNV
pH	7.87	0.1		pH units	1	4/11/2008
<b>SM 2540C: TDS</b>						Analyst: TAF
Total Dissolved Solids	550	20		mg/L	1	4/11/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
 Project: San Juan River Bluff Semi-Annual-2008

Work Order: 0804103

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 300.0: Anions

Sample ID: MB MBLK Batch ID: R28042 Analysis Date: 4/9/2008 9:38:02 AM

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

Sample ID: LCS LCS Batch ID: R28042 Analysis Date: 4/9/2008 9:55:27 AM

Fluoride	0.4856	mg/L	0.10	97.1	90	110			
Chloride	4.825	mg/L	0.10	96.5	90	110			
Nitrogen, Nitrite (As N)	0.9733	mg/L	0.10	97.3	90	110			
Bromide	2.489	mg/L	0.10	99.5	90	110			
Nitrogen, Nitrate (As N)	2.481	mg/L	0.10	99.2	90	110			
Phosphorus, Orthophosphate (As P)	4.895	mg/L	0.50	97.9	90	110			
Sulfate	9.692	mg/L	0.50	96.9	90	110			

## Method: SM 2320B: Alkalinity

Sample ID: MB MBLK Batch ID: R28122 Analysis Date: 4/15/2008

Alkalinity, Total (As CaCO3)	ND	mg/L CaC	20						
Carbonate	ND	mg/L CaC	2.0						
Bicarbonate	ND	mg/L CaC	20						

Sample ID: LCS LCS Batch ID: R28122 Analysis Date: 4/15/2008

Alkalinity, Total (As CaCO3)	80.00	mg/L CaC	20	97.5	80	120			
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## Method: EPA Method 8015B: Diesel Range

Sample ID: MB-15612 MBLK Batch ID: 15612 Analysis Date: 4/10/2008 9:05:46 PM

Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						

Sample ID: LCS-15612 LCS Batch ID: 15612 Analysis Date: 4/10/2008 9:39:29 PM

Diesel Range Organics (DRO)	4.803	mg/L	1.0	96.1	74	157			
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Sample ID: LCSD-15612 LCSD Batch ID: 15612 Analysis Date: 4/10/2008 10:13:21 PM

Diesel Range Organics (DRO)	5.257	mg/L	1.0	105	74	157	9.04	23	
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## Method: EPA Method 8015B: Gasoline Range

Sample ID: 5ML RB MBLK Batch ID: R28104 Analysis Date: 4/15/2008 9:04:21 AM

Gasoline Range Organics (GRO)	ND	mg/L	0.050						
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Sample ID: 2.5UG GRO LCS Batch ID: R28104 Analysis Date: 4/16/2008 12:10:23 AM

Gasoline Range Organics (GRO)	0.4920	mg/L	0.050	98.4	80	115			
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## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
 Project: San Juan River Bluff Semi-Annual-2008

Work Order: 0804103

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 0804103-02a msd MSD Batch ID: R28141 Analysis Date: 4/17/2008 6:46:47 PM

Benzene 20.57 µg/L 1.0 103 72.4 126 3.74 20

Toluene 17.39 µg/L 1.0 86.9 79.2 115 0.482 20

Sample ID: 5mL MBLK Batch ID: R28141 Analysis Date: 4/17/2008 9:09:26 AM

Benzene ND µg/L 1.0

Toluene ND µg/L 1.0

Ethylbenzene ND µg/L 1.0

Methyl tert-butyl ether (MTBE) ND µg/L 1.0

Xylenes, Total ND µg/L 2.0

Sample ID: 100ng lcs LCS Batch ID: R28141 Analysis Date: 4/17/2008 10:07:16 AM

Benzene 21.41 µg/L 1.0 107 72.4 126

Toluene 17.68 µg/L 1.0 88.4 69.4 126

Sample ID: 0804103-02a ms MS Batch ID: R28141 Analysis Date: 4/17/2008 6:17:59 PM

Benzene 19.82 µg/L 1.0 99.1 72.4 126

Toluene 17.47 µg/L 1.0 87.4 79.2 115

## Method: EPA Method 7470: Mercury

Sample ID: 0804103-01C MSD MSD Batch ID: 15677 Analysis Date: 4/17/2008 3:36:30 PM

Mercury 0.004937 mg/L 0.00020 98.7 75 125 0.0215 20

Sample ID: MB-15677 MBLK Batch ID: 15677 Analysis Date: 4/17/2008 2:49:38 PM

Mercury ND mg/L 0.00020

Sample ID: LCS-15677 LCS Batch ID: 15677 Analysis Date: 4/17/2008 2:51:22 PM

Mercury 0.005034 mg/L 0.00020 101 80 120

Sample ID: 0804103-01C MS MS Batch ID: 15677 Analysis Date: 4/17/2008 3:34:42 PM

Mercury 0.004935 mg/L 0.00020 98.7 75 125

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
 Project: San Juan River Bluff Semi-Annual-2008

Work Order: 0804103

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 6010B: Dissolved Metals

Sample ID: 0804103-02E MSD MSD Batch ID: R28080 Analysis Date: 4/14/2008 2:59:58 PM

Calcium	143.0	mg/L	5.0	88.6	75	125	3.78	20
Sodium	125.0	mg/L	5.0	95.8	75	125	3.71	20

Sample ID: 0804103-02EMSD MSD Batch ID: R28106 Analysis Date: 4/15/2008 5:13:52 PM

Arsenic	0.5126	mg/L	0.020	103	75	125	0.215	20
Barium	0.5404	mg/L	0.020	99.7	75	125	1.40	20
Cadmium	0.5203	mg/L	0.0020	104	75	125	0.635	20
Chromium	0.5068	mg/L	0.0060	101	75	125	0.720	20
Copper	0.5137	mg/L	0.0060	103	75	125	0.559	20
Iron	0.4891	mg/L	0.020	97.8	75	125	2.50	20
Lead	0.4925	mg/L	0.0050	98.5	75	125	1.33	20
Magnesium	67.87	mg/L	1.0	93.4	75	125	3.17	20
Manganese	0.5042	mg/L	0.0020	100	75	125	1.28	20
Potassium	55.12	mg/L	1.0	96.8	75	125	0.324	20
Selenium	0.6052	mg/L	0.050	121	75	125	9.52	20
Silver	0.4909	mg/L	0.0050	98.2	75	125	0.188	20
Uranium	0.4883	mg/L	0.10	97.7	75	125	0.0478	20
Zinc	0.5341	mg/L	0.050	101	75	125	1.51	20

Sample ID: 0804103-02EMSD MSD Batch ID: R28106 Analysis Date: 4/15/2008 5:25:49 PM

Calcium	346.6	mg/L	5.0	99.3	75	125	3.08	20
Sodium	321.7	mg/L	5.0	98.7	75	125	3.84	20

Sample ID: MB MBLK Batch ID: R28080 Analysis Date: 4/14/2008 10:55:39 AM

Arsenic	ND	mg/L	0.020
Barium	ND	mg/L	0.020
Cadmium	ND	mg/L	0.0020
Calcium	ND	mg/L	1.0
Chromium	ND	mg/L	0.0060
Copper	ND	mg/L	0.0060
Iron	ND	mg/L	0.020
Lead	ND	mg/L	0.0050
Magnesium	ND	mg/L	1.0
Manganese	ND	mg/L	0.0020
Potassium	ND	mg/L	1.0
Selenium	ND	mg/L	0.050
Silver	ND	mg/L	0.0050
Sodium	ND	mg/L	1.0
Uranium	ND	mg/L	0.10
Zinc	ND	mg/L	0.050

Sample ID: MB MBLK Batch ID: R28106 Analysis Date: 4/15/2008 4:59:02 PM

Arsenic	ND	mg/L	0.020
Barium	ND	mg/L	0.020
Cadmium	ND	mg/L	0.0020
Calcium	ND	mg/L	1.0
Chromium	ND	mg/L	0.0060

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
 Project: San Juan River Bluff Semi-Annual-2008

Work Order: 0804103

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 6010B: Dissolved Metals

Sample ID: MB MBLK Batch ID: R28106 Analysis Date: 4/15/2008 4:59:02 PM

Copper	ND	mg/L	0.0060
Iron	ND	mg/L	0.020
Lead	ND	mg/L	0.0050
Magnesium	ND	mg/L	1.0
Manganese	ND	mg/L	0.0020
Potassium	ND	mg/L	1.0
Selenium	ND	mg/L	0.050
Sodium	ND	mg/L	1.0

Sample ID: LCS LCS Batch ID: R28080 Analysis Date: 4/14/2008 10:58:40 AM

Arsenic	0.5112	mg/L	0.020	102	80	120
Barium	0.5143	mg/L	0.020	103	80	120
Cadmium	0.5230	mg/L	0.0020	105	80	120
Calcium	53.35	mg/L	1.0	106	80	120
Chromium	0.5167	mg/L	0.0060	103	80	120
Copper	0.5142	mg/L	0.0060	103	80	120
Iron	0.5068	mg/L	0.020	101	80	120
Lead	0.5075	mg/L	0.0050	101	80	120
Magnesium	53.70	mg/L	1.0	106	80	120
Manganese	0.5124	mg/L	0.0020	102	80	120
Potassium	57.05	mg/L	1.0	104	80	120
Selenium	0.4993	mg/L	0.050	99.9	80	120
Silver	0.5300	mg/L	0.0050	106	80	120
Sodium	57.19	mg/L	1.0	113	80	120
Uranium	0.5251	mg/L	0.10	105	80	120
Zinc	0.5127	mg/L	0.050	103	80	120

Sample ID: LCS LCS Batch ID: R28106 Analysis Date: 4/15/2008 5:01:57 PM

Arsenic	0.4935	mg/L	0.020	98.7	80	120
Barium	0.4994	mg/L	0.020	99.9	80	120
Cadmium	0.5144	mg/L	0.0020	103	80	120
Calcium	50.65	mg/L	1.0	100	80	120
Chromium	0.5072	mg/L	0.0060	101	80	120
Copper	0.5049	mg/L	0.0060	101	80	120
Iron	0.4853	mg/L	0.020	97.1	80	120
Lead	0.4981	mg/L	0.0050	99.6	80	120
Magnesium	51.31	mg/L	1.0	102	80	120
Manganese	0.4969	mg/L	0.0020	99.4	80	120
Potassium	54.60	mg/L	1.0	99.3	80	120
Selenium	0.5137	mg/L	0.050	103	80	120
Sodium	54.90	mg/L	1.0	109	80	120

Sample ID: 0804103-02E MS Batch ID: R28080 Analysis Date: 4/14/2008 2:57:05 PM

Calcium	137.7	mg/L	5.0	78.1	75	125
Sodium	120.5	mg/L	5.0	86.8	75	125

Sample ID: 0804103-02EMS MS Batch ID: R28106 Analysis Date: 4/15/2008 5:10:47 PM

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
 Project: San Juan River Bluff Semi-Annual-2008

Work Order: 0804103

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 6010B: Dissolved Metals

Sample ID: 0804103-02EMS

MS

Batch ID: R28106 Analysis Date: 4/15/2008 5:10:47 PM

Arsenic	0.5115	mg/L	0.020	102	75	125			
Barium	0.5329	mg/L	0.020	98.2	75	125			
Cadmium	0.5170	mg/L	0.0020	103	75	125			
Chromium	0.5032	mg/L	0.0060	101	75	125			
Copper	0.5109	mg/L	0.0060	102	75	125			
Iron	0.5015	mg/L	0.020	100	75	125			
Lead	0.4860	mg/L	0.0050	97.2	75	125			
Magnesium	70.06	mg/L	1.0	97.8	75	125			
Manganese	0.4978	mg/L	0.0020	99.1	75	125			
Potassium	55.30	mg/L	1.0	97.1	75	125			
Selenium	0.5502	mg/L	0.050	110	75	125			
Silver	0.4900	mg/L	0.0050	98.0	75	125			
Uranium	0.4885	mg/L	0.10	97.7	75	125			
Zinc	0.5261	mg/L	0.050	99.6	75	125			

Sample ID: 0804103-02EMS

MS

Batch ID: R28106 Analysis Date: 4/15/2008 5:22:55 PM

Calcium	336.0	mg/L	5.0	95.1	75	125			
Sodium	309.5	mg/L	5.0	93.9	75	125			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: San Juan Refining  
 Project: San Juan River Bluff Semi-Annual-2008

Work Order: 0804103

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA 6010B: Total Recoverable Metals

Sample ID: 0804103-01CMSD MSD Batch ID: 15622 Analysis Date: 4/12/2008 1:52:27 PM

Arsenic	0.4566	mg/L	0.020	91.3	75	125	2.70	20
Barium	0.5089	mg/L	0.010	95.1	75	125	3.63	20
Cadmium	0.4803	mg/L	0.0020	96.1	75	125	1.63	20
Chromium	0.4750	mg/L	0.0060	95.0	75	125	2.31	20
Lead	0.4684	mg/L	0.0050	93.7	75	125	1.06	20
Selenium	0.4515	mg/L	0.050	90.3	75	125	4.85	20
Silver	0.4913	mg/L	0.0050	98.3	75	125	3.64	20

Sample ID: MB-15622 MBLK Batch ID: 15622 Analysis Date: 4/12/2008 1:39:50 PM

Arsenic	ND	mg/L	0.020					
Barium	ND	mg/L	0.010					
Cadmium	ND	mg/L	0.0020					
Chromium	ND	mg/L	0.0060					
Lead	ND	mg/L	0.0050					
Selenium	ND	mg/L	0.050					
Silver	ND	mg/L	0.0050					

Sample ID: LCS-15622 LCS Batch ID: 15622 Analysis Date: 4/12/2008 1:42:20 PM

Arsenic	0.4676	mg/L	0.020	93.5	80	120		
Barium	0.4587	mg/L	0.010	91.7	80	120		
Cadmium	0.4554	mg/L	0.0020	91.1	80	120		
Chromium	0.4526	mg/L	0.0060	90.5	80	120		
Lead	0.4566	mg/L	0.0050	91.3	80	120		
Selenium	0.4562	mg/L	0.050	91.2	80	120		
Silver	0.4756	mg/L	0.0050	95.1	80	120		

Sample ID: 0804103-01CMS MS Batch ID: 15622 Analysis Date: 4/12/2008 1:49:54 PM

Arsenic	0.4444	mg/L	0.020	88.9	75	125		
Barium	0.4907	mg/L	0.010	91.5	75	125		
Cadmium	0.4725	mg/L	0.0020	94.5	75	125		
Chromium	0.4642	mg/L	0.0060	92.8	75	125		
Lead	0.4635	mg/L	0.0050	92.7	75	125		
Selenium	0.4301	mg/L	0.050	86.0	75	125		
Silver	0.4737	mg/L	0.0050	94.7	75	125		

Method: SM 2540C: TDS

Sample ID: 0804103-01D MSD MSD Batch ID: 15621 Analysis Date: 4/11/2008

Total Dissolved Solids	1669	mg/L	20	106	80	120	2.73	20
------------------------	------	------	----	-----	----	-----	------	----

Sample ID: MB-15621 MBLK Batch ID: 15621 Analysis Date: 4/11/2008

Total Dissolved Solids	ND	mg/L	20					
------------------------	----	------	----	--	--	--	--	--

Sample ID: LCS-15621 LCS Batch ID: 15621 Analysis Date: 4/11/2008

Total Dissolved Solids	1020	mg/L	20	101	80	120		
------------------------	------	------	----	-----	----	-----	--	--

Sample ID: 0804103-01D MS MS Batch ID: 15621 Analysis Date: 4/11/2008

Total Dissolved Solids	1624	mg/L	20	102	80	120		
------------------------	------	------	----	-----	----	-----	--	--

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

4/9/2008

Work Order Number 0804103

Received by: TLS

Checklist completed by:

Signature

Date

Sample ID labels checked by

Initials

Matrix

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☒

No ☐

N/A ☐

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

Container/Temp Blank temperature?

5°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding

Comments:

Corrective Action



COVER LETTER

Thursday, September 18, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911

RE: Down-Gradient Wells Annual Aug 2008

Order No.: 0808241

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 8/14/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab Order:** 0808241

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808241-01A	MW-34	16802	EPA Method 8015B: Diesel Range	8/13/2008 1:20:00 PM
0808241-01A	MW-34	R29824	EPA Method 8260B: VOLATILES	8/13/2008 1:20:00 PM
0808241-01A	MW-34	R29824	EPA Method 8260B: VOLATILES	8/13/2008 1:20:00 PM
0808241-01A	MW-34	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 1:20:00 PM
0808241-01A	MW-34	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 1:20:00 PM
0808241-01A	MW-34	R29803	EPA Method 8260B: VOLATILES	8/13/2008 1:20:00 PM
0808241-01B	MW-34	16804	EPA Method 8270C: Semivolatiles	8/13/2008 1:20:00 PM
0808241-01C	MW-34	R29800	EPA Method 300.0: Anions	8/13/2008 1:20:00 PM
0808241-01C	MW-34	R29884	Carbon Dioxide	8/13/2008 1:20:00 PM
0808241-01C	MW-34	R29800	EPA Method 300.0: Anions	8/13/2008 1:20:00 PM
0808241-01C	MW-34	R29866	SM 2320B: Alkalinity	8/13/2008 1:20:00 PM
0808241-01D	MW-34	16906	EPA Method 7470: Mercury	8/13/2008 1:20:00 PM
0808241-01D	MW-34	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 1:20:00 PM
0808241-01E	MW-34	R30124	EPA Method 6010B: Dissolved Metals	8/13/2008 1:20:00 PM
0808241-01E	MW-34	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 1:20:00 PM
0808241-01E	MW-34	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 1:20:00 PM
0808241-02A	MW-35	R29803	EPA Method 8260B: VOLATILES	8/13/2008 1:45:00 PM
0808241-02A	MW-35	R29824	EPA Method 8260B: VOLATILES	8/13/2008 1:45:00 PM
0808241-02A	MW-35	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 1:45:00 PM
0808241-02A	MW-35	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 1:45:00 PM
0808241-02A	MW-35	16802	EPA Method 8015B: Diesel Range	8/13/2008 1:45:00 PM
0808241-02B	MW-35	16804	EPA Method 8270C: Semivolatiles	8/13/2008 1:45:00 PM
0808241-02C	MW-35	R29800	EPA Method 300.0: Anions	8/13/2008 1:45:00 PM
0808241-02C	MW-35	R29866	SM 2320B: Alkalinity	8/13/2008 1:45:00 PM
0808241-02C	MW-35	R29800	EPA Method 300.0: Anions	8/13/2008 1:45:00 PM
0808241-02C	MW-35	R29884	Carbon Dioxide	8/13/2008 1:45:00 PM
0808241-02D	MW-35	16906	EPA Method 7470: Mercury	8/13/2008 1:45:00 PM
0808241-02D	MW-35	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 1:45:00 PM
0808241-02E	MW-35	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 1:45:00 PM
0808241-02E	MW-35	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 1:45:00 PM
0808241-02E	MW-35	R30124	EPA Method 6010B: Dissolved Metals	8/13/2008 1:45:00 PM
0808241-03A	Trip Blank	R29921	EPA Method 8015B: Gasoline Range	
0808241-03A	Trip Blank	R29803	EPA Method 8260B: VOLATILES	

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808241  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808241-01

**Client Sample ID:** MW-34  
**Collection Date:** 8/13/2008 1:20:00 PM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.83	0.10		mg/L	1	8/14/2008 10:30:34 PM
Chloride	110	1.0		mg/L	10	8/14/2008 10:47:59 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/14/2008 10:30:34 PM
Bromide	1.3	0.10		mg/L	1	8/14/2008 10:30:34 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/14/2008 10:30:34 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/14/2008 10:30:34 PM
Sulfate	9.9	0.50		mg/L	1	8/14/2008 10:30:34 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808241  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808241-01

Client Sample ID: MW-34  
 Collection Date: 8/13/2008 1:20:00 PM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	3.9	1.0		mg/L	1	8/18/2008 4:03:59 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 4:03:59 PM
Surr: DNOP	118	58-140		%REC	1	8/18/2008 4:03:59 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	1.4	0.10		mg/L	2	8/26/2008 9:07:10 PM
Surr: BFB	207	79.2-121	S	%REC	2	8/26/2008 9:07:10 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.83	0.10		mg/L	1	8/14/2008 10:30:34 PM
Chloride	110	1.0		mg/L	10	8/14/2008 10:47:59 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/14/2008 10:30:34 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/14/2008 10:30:34 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/14/2008 10:30:34 PM
Sulfate	9.9	0.50		mg/L	1	8/14/2008 10:30:34 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:35:08 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 3:53:53 PM
Barium	0.57	0.020		mg/L	1	8/29/2008 3:53:53 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 3:53:53 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 3:53:53 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 3:53:53 PM
Iron	4.1	0.20		mg/L	10	8/29/2008 4:49:52 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 3:53:53 PM
Manganese	3.1	0.020		mg/L	10	8/29/2008 4:49:52 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:18:34 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 3:53:53 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 3:53:53 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:37:19 PM
Barium	0.58	0.020		mg/L	1	8/28/2008 12:37:19 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:37:19 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:37:19 PM
Lead	ND	0.0050		mg/L	1	8/28/2008 12:37:19 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:37:19 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:37:19 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808241  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808241-01

**Client Sample ID:** MW-34  
**Collection Date:** 8/13/2008 1:20:00 PM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/21/2008
Acenaphthylene	ND	10		µg/L	1	8/21/2008
Aniline	ND	10		µg/L	1	8/21/2008
Anthracene	ND	10		µg/L	1	8/21/2008
Azobenzene	ND	10		µg/L	1	8/21/2008
Benz(a)anthracene	ND	10		µg/L	1	8/21/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/21/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/21/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/21/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/21/2008
Benzoic acid	ND	20		µg/L	1	8/21/2008
Benzyl alcohol	ND	10		µg/L	1	8/21/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/21/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/21/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/21/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/21/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/21/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/21/2008
Carbazole	ND	10		µg/L	1	8/21/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/21/2008
4-Chloroaniline	ND	10		µg/L	1	8/21/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/21/2008
2-Chlorophenol	ND	10		µg/L	1	8/21/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/21/2008
Chrysene	ND	10		µg/L	1	8/21/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/21/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/21/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/21/2008
Dibenzofuran	ND	10		µg/L	1	8/21/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/21/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/21/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/21/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/21/2008
Diethyl phthalate	ND	10		µg/L	1	8/21/2008
Dimethyl phthalate	ND	10		µg/L	1	8/21/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/21/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/21/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/21/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/21/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/21/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/21/2008
Fluoranthene	ND	10		µg/L	1	8/21/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808241  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808241-01

**Client Sample ID:** MW-34  
**Collection Date:** 8/13/2008 1:20:00 PM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/21/2008
Hexachlorobenzene	ND	10		µg/L	1	8/21/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/21/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/21/2008
Hexachloroethane	ND	10		µg/L	1	8/21/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/21/2008
Isophorone	ND	10		µg/L	1	8/21/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/21/2008
2-Methylphenol	ND	10		µg/L	1	8/21/2008
3+4-Methylphenol	ND	10		µg/L	1	8/21/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/21/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/21/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/21/2008
Naphthalene	ND	10		µg/L	1	8/21/2008
2-Nitroaniline	ND	10		µg/L	1	8/21/2008
3-Nitroaniline	ND	10		µg/L	1	8/21/2008
4-Nitroaniline	ND	10		µg/L	1	8/21/2008
Nitrobenzene	ND	10		µg/L	1	8/21/2008
2-Nitrophenol	ND	10		µg/L	1	8/21/2008
4-Nitrophenol	ND	10		µg/L	1	8/21/2008
Pentachlorophenol	ND	40		µg/L	1	8/21/2008
Phenanthrene	ND	10		µg/L	1	8/21/2008
Phenol	ND	10		µg/L	1	8/21/2008
Pyrene	ND	10		µg/L	1	8/21/2008
Pyridine	ND	10		µg/L	1	8/21/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/21/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/21/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/21/2008
Surr: 2,4,6-Tribromophenol	84.6	16.6-150		%REC	1	8/21/2008
Surr: 2-Fluorobiphenyl	79.7	19.6-134		%REC	1	8/21/2008
Surr: 2-Fluorophenol	49.7	9.54-113		%REC	1	8/21/2008
Surr: 4-Terphenyl-d14	72.8	22.7-145		%REC	1	8/21/2008
Surr: Nitrobenzene-d5	76.6	14.6-134		%REC	1	8/21/2008
Surr: Phenol-d5	44.3	10.7-80.3		%REC	1	8/21/2008
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	3.3	1.0		µg/L	1	8/18/2008 8:10:15 PM
Toluene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Ethylbenzene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Methyl tert-butyl ether (MTBE)	2.6	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,2,4-Trimethylbenzene	210	5.0		µg/L	5	8/18/2008 7:41:28 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM

**Qualifiers:**  
 \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808241  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808241-01

Client Sample ID: MW-34  
 Collection Date: 8/13/2008 1:20:00 PM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Naphthalene	9.4	2.0		µg/L	1	8/18/2008 8:10:15 PM
1-Methylnaphthalene	4.7	4.0		µg/L	1	8/18/2008 8:10:15 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/18/2008 8:10:15 PM
Acetone	ND	10		µg/L	1	8/18/2008 8:10:15 PM
Bromobenzene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Bromoform	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Bromomethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
2-Butanone	ND	10		µg/L	1	8/18/2008 8:10:15 PM
Carbon disulfide	ND	10		µg/L	1	8/18/2008 8:10:15 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Chlorobenzene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Chloroethane	ND	2.0		µg/L	1	8/18/2008 8:10:15 PM
Chloroform	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Chloromethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/18/2008 8:10:15 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Dibromomethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/18/2008 8:10:15 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
2-Hexanone	ND	10		µg/L	1	8/18/2008 8:10:15 PM
Isopropylbenzene	25	1.0		µg/L	1	8/18/2008 8:10:15 PM
4-Isopropyltoluene	5.2	1.0		µg/L	1	8/18/2008 8:10:15 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/18/2008 8:10:15 PM
Methylene Chloride	ND	3.0		µg/L	1	8/18/2008 8:10:15 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
n-Propylbenzene	20	1.0		µg/L	1	8/18/2008 8:10:15 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808241  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808241-01

**Client Sample ID:** MW-34  
**Collection Date:** 8/13/2008 1:20:00 PM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	9.7	1.0		µg/L	1	8/18/2008 8:10:15 PM
Styrene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
tert-Butylbenzene	2.4	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/18/2008 8:10:15 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/18/2008 8:10:15 PM
Vinyl chloride	ND	1.0		µg/L	1	8/18/2008 8:10:15 PM
Xylenes, Total	1.7	1.5		µg/L	1	8/18/2008 8:10:15 PM
Surr: 1,2-Dichloroethane-d4	103	68.1-123		%REC	1	8/18/2008 8:10:15 PM
Surr: 4-Bromofluorobenzene	118	53.2-145		%REC	1	8/18/2008 8:10:15 PM
Surr: Dibromofluoromethane	98.3	68.5-119		%REC	1	8/18/2008 8:10:15 PM
Surr: Toluene-d8	130	64-131		%REC	1	8/18/2008 8:10:15 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	750	40		mg/L CaCO3	2	8/21/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/21/2008
Bicarbonate	750	40		mg/L CaCO3	2	8/21/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	740	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808241  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808241-02

**Client Sample ID:** MW-35  
**Collection Date:** 8/13/2008 1:45:00 PM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.76	0.10		mg/L	1	8/14/2008 11:05:24 PM
Chloride	110	1.0		mg/L	10	8/14/2008 11:22:49 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/14/2008 11:05:24 PM
Bromide	1.3	0.10		mg/L	1	8/14/2008 11:05:24 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/14/2008 11:05:24 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/14/2008 11:05:24 PM
Sulfate	3.6	0.50		mg/L	1	8/14/2008 11:05:24 PM

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Estimated value	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808241  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808241-02

Client Sample ID: MW-35  
 Collection Date: 8/13/2008 1:45:00 PM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	1.6	1.0		mg/L	1	8/18/2008 4:38:05 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 4:38:05 PM
Surr: DNOP	126	58-140		%REC	1	8/18/2008 4:38:05 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	0.54	0.050		mg/L	1	8/26/2008 10:07:59 PM
Surr: BFB	156	79.2-121	S	%REC	1	8/26/2008 10:07:59 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.76	0.10		mg/L	1	8/14/2008 11:05:24 PM
Chloride	110	1.0		mg/L	10	8/14/2008 11:22:49 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/14/2008 11:05:24 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/14/2008 11:05:24 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/14/2008 11:05:24 PM
Sulfate	3.6	0.50		mg/L	1	8/14/2008 11:05:24 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:36:59 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 3:56:35 PM
Barium	0.65	0.020		mg/L	1	8/29/2008 3:56:35 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 3:56:35 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 3:56:35 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 3:56:35 PM
Iron	2.6	0.10		mg/L	5	8/29/2008 4:52:37 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 3:56:35 PM
Manganese	1.4	0.010		mg/L	5	8/29/2008 4:52:37 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:21:00 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 3:56:35 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 3:56:35 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:39:50 PM
Barium	0.70	0.020		mg/L	1	8/28/2008 12:39:50 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:39:50 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:39:50 PM
Lead	0.0070	0.0050		mg/L	1	8/28/2008 12:39:50 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:39:50 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:39:50 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808241  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808241-02

**Client Sample ID:** MW-35  
**Collection Date:** 8/13/2008 1:45:00 PM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/21/2008
Acenaphthylene	ND	10		µg/L	1	8/21/2008
Aniline	ND	10		µg/L	1	8/21/2008
Anthracene	ND	10		µg/L	1	8/21/2008
Azobenzene	ND	10		µg/L	1	8/21/2008
Benz(a)anthracene	ND	10		µg/L	1	8/21/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/21/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/21/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/21/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/21/2008
Benzoic acid	ND	20		µg/L	1	8/21/2008
Benzyl alcohol	ND	10		µg/L	1	8/21/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/21/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/21/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/21/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/21/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/21/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/21/2008
Carbazole	ND	10		µg/L	1	8/21/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/21/2008
4-Chloroaniline	ND	10		µg/L	1	8/21/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/21/2008
2-Chlorophenol	ND	10		µg/L	1	8/21/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/21/2008
Chrysene	ND	10		µg/L	1	8/21/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/21/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/21/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/21/2008
Dibenzofuran	ND	10		µg/L	1	8/21/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/21/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/21/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/21/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/21/2008
Diethyl phthalate	ND	10		µg/L	1	8/21/2008
Dimethyl phthalate	ND	10		µg/L	1	8/21/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/21/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/21/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/21/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/21/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/21/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/21/2008
Fluoranthene	ND	10		µg/L	1	8/21/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808241  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808241-02

**Client Sample ID:** MW-35  
**Collection Date:** 8/13/2008 1:45:00 PM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## EPA METHOD 8270C: SEMIVOLATILES

Analyst: JDC

Fluorene	ND	10		µg/L	1	8/21/2008
Hexachlorobenzene	ND	10		µg/L	1	8/21/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/21/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/21/2008
Hexachloroethane	ND	10		µg/L	1	8/21/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/21/2008
Isophorone	ND	10		µg/L	1	8/21/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/21/2008
2-Methylphenol	ND	10		µg/L	1	8/21/2008
3+4-Methylphenol	ND	10		µg/L	1	8/21/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/21/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/21/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/21/2008
Naphthalene	ND	10		µg/L	1	8/21/2008
2-Nitroaniline	ND	10		µg/L	1	8/21/2008
3-Nitroaniline	ND	10		µg/L	1	8/21/2008
4-Nitroaniline	ND	10		µg/L	1	8/21/2008
Nitrobenzene	ND	10		µg/L	1	8/21/2008
2-Nitrophenol	ND	10		µg/L	1	8/21/2008
4-Nitrophenol	ND	10		µg/L	1	8/21/2008
Pentachlorophenol	ND	40		µg/L	1	8/21/2008
Phenanthrene	ND	10		µg/L	1	8/21/2008
Phenol	ND	10		µg/L	1	8/21/2008
Pyrene	ND	10		µg/L	1	8/21/2008
Pyridine	ND	10		µg/L	1	8/21/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/21/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/21/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/21/2008
Surr: 2,4,6-Tribromophenol	84.0	16.6-150		%REC	1	8/21/2008
Surr: 2-Fluorobiphenyl	83.1	19.6-134		%REC	1	8/21/2008
Surr: 2-Fluorophenol	57.4	9.54-113		%REC	1	8/21/2008
Surr: 4-Terphenyl-d14	69.5	22.7-145		%REC	1	8/21/2008
Surr: Nitrobenzene-d5	78.7	14.6-134		%REC	1	8/21/2008
Surr: Phenol-d5	51.3	10.7-80.3		%REC	1	8/21/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Toluene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Ethylbenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,2,4-Trimethylbenzene	100	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808241  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808241-02

**Client Sample ID:** MW-35  
**Collection Date:** 8/13/2008 1:45:00 PM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Naphthalene	ND	4.0		µg/L	2	8/18/2008 9:09:05 PM
1-Methylnaphthalene	ND	8.0		µg/L	2	8/18/2008 9:09:05 PM
2-Methylnaphthalene	ND	8.0		µg/L	2	8/18/2008 9:09:05 PM
Acetone	ND	20		µg/L	2	8/18/2008 9:09:05 PM
Bromobenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Bromodichloromethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Bromoform	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Bromomethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
2-Butanone	ND	20		µg/L	2	8/18/2008 9:09:05 PM
Carbon disulfide	ND	20		µg/L	2	8/18/2008 9:09:05 PM
Carbon Tetrachloride	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Chlorobenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Chloroethane	ND	4.0		µg/L	2	8/18/2008 9:09:05 PM
Chloroform	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Chloromethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
2-Chlorotoluene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
4-Chlorotoluene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
cis-1,2-DCE	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	8/18/2008 9:09:05 PM
Dibromochloromethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Dibromomethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,4-Dichlorobenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Dichlorodifluoromethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,1-Dichloroethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,1-Dichloroethene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,2-Dichloropropane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,3-Dichloropropane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
2,2-Dichloropropane	ND	4.0		µg/L	2	8/18/2008 9:09:05 PM
1,1-Dichloropropene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Hexachlorobutadiene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
2-Hexanone	ND	20		µg/L	2	8/18/2008 9:09:05 PM
Isopropylbenzene	7.0	2.0		µg/L	2	8/18/2008 9:09:05 PM
4-Isopropyltoluene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
4-Methyl-2-pentanone	ND	20		µg/L	2	8/18/2008 9:09:05 PM
Methylene Chloride	ND	6.0		µg/L	2	8/18/2008 9:09:05 PM
n-Butylbenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
n-Propylbenzene	4.3	2.0		µg/L	2	8/18/2008 9:09:05 PM

**Qualifiers:**  
 \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808241  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808241-02

Client Sample ID: MW-35  
 Collection Date: 8/13/2008 1:45:00 PM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	2.6	2.0		µg/L	2	8/18/2008 9:09:05 PM
Styrene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
tert-Butylbenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	8/18/2008 9:09:05 PM
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
trans-1,2-DCE	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Trichloroethene (TCE)	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Trichlorofluoromethane	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
1,2,3-Trichloropropane	ND	4.0		µg/L	2	8/18/2008 9:09:05 PM
Vinyl chloride	ND	2.0		µg/L	2	8/18/2008 9:09:05 PM
Xylenes, Total	ND	3.0		µg/L	2	8/18/2008 9:09:05 PM
Surr: 1,2-Dichloroethane-d4	96.0	68.1-123		%REC	2	8/18/2008 9:09:05 PM
Surr: 4-Bromofluorobenzene	105	53.2-145		%REC	2	8/18/2008 9:09:05 PM
Surr: Dibromofluoromethane	93.5	68.5-119		%REC	2	8/18/2008 9:09:05 PM
Surr: Toluene-d8	100	64-131		%REC	2	8/18/2008 9:09:05 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	870	40		mg/L CaCO3	2	8/21/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/21/2008
Bicarbonate	870	40		mg/L CaCO3	2	8/21/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	830	1.0		mg CO2/L	1	8/22/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808241  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808241-03

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Date Received:** 8/14/2008  
**Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/26/2008 1:47:14 AM
Surr: BFB	80.1	79.2-121		%REC	1	8/26/2008 1:47:14 AM
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Toluene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Ethylbenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Naphthalene	ND	2.0		µg/L	1	8/16/2008 12:27:21 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/16/2008 12:27:21 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/16/2008 12:27:21 AM
Acetone	ND	10		µg/L	1	8/16/2008 12:27:21 AM
Bromobenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Bromodichloromethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Bromoform	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Bromomethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
2-Butanone	ND	10		µg/L	1	8/16/2008 12:27:21 AM
Carbon disulfide	ND	10		µg/L	1	8/16/2008 12:27:21 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Chlorobenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Chloroethane	ND	2.0		µg/L	1	8/16/2008 12:27:21 AM
Chloroform	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Chloromethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
2-Chlorotoluene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
4-Chlorotoluene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
cis-1,2-DCE	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/16/2008 12:27:21 AM
Dibromochloromethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Dibromomethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808241  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808241-03

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Date Received:** 8/14/2008  
**Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
2,2-Dichloropropane	ND	2.0		µg/L	1	8/16/2008 12:27:21 AM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
2-Hexanone	ND	10		µg/L	1	8/16/2008 12:27:21 AM
Isopropylbenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/16/2008 12:27:21 AM
Methylene Chloride	ND	3.0		µg/L	1	8/16/2008 12:27:21 AM
n-Butylbenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
n-Propylbenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
sec-Butylbenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Styrene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
tert-Butylbenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/16/2008 12:27:21 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
trans-1,2-DCE	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/16/2008 12:27:21 AM
Vinyl chloride	ND	1.0		µg/L	1	8/16/2008 12:27:21 AM
Xylenes, Total	ND	1.5		µg/L	1	8/16/2008 12:27:21 AM
Surr: 1,2-Dichloroethane-d4	92.4	68.1-123		%REC	1	8/16/2008 12:27:21 AM
Surr: 4-Bromofluorobenzene	100	53.2-145		%REC	1	8/16/2008 12:27:21 AM
Surr: Dibromofluoromethane	96.3	68.5-119		%REC	1	8/16/2008 12:27:21 AM
Surr: Toluene-d8	98.0	64-131		%REC	1	8/16/2008 12:27:21 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**CASE NARRATIVE**

September 5, 2008

Lab Name: Anatek Labs, Inc. 1282 Alturas Drive, Moscow, ID 83843 [www.anateklabs.com](http://www.anateklabs.com) FL NELAP E87893, NV ID13-2004-31, WA DOE C126, OR ELAP ID200001, MT 0028, ID, CO, NM

**Project Tracking No.:** 0808241**Anatek Batch:** 080815026

**Project Summary:** Two (2) water samples were received on 8/15/2008 for metals (EPA 6020A) analysis. All samples were received in good condition and with the appropriate chain of custody. Samples were received at 4.1C.

<u>Client Sample ID</u>	<u>Anatek Sample ID</u>	<u>Method/Prep Method</u>
0808241-01F / MW-34	080815026-001	EPA 6020A/3005A
0808241-02F / MW-35	080815026-002	EPA 6020A/3005A

**QA/QC Checks**

<u>Parameters</u>	<u>Yes / No</u>	<u>Exceptions / Deviations</u>
Sample Holding Time Valid?	Y	NA
Surrogate Recoveries Valid?	Y	NA
QC Sample(s) Recoveries Valid?	Y	NA
Method Blank(s) Valid?	Y	NA
Tune(s) Valid?	Y	NA
Internal Standard Responses Valid?	Y	NA
Initial Calibration Curve(s) Valid?	Y	NA
Continuing Calibration(s) Valid?	Y	NA
Comments:	Y	NA

**1. Holding Time Requirements**

No problems encountered.

**2. GC/MS Tune Requirements**

NA

**3. Calibration Requirements**

No problems encountered.

**4. Surrogate Recovery Requirements**

NA

**5. QC Sample (LCS/MS/MSD) Recovery Requirements**

No problems encountered.

**6. Method Blank Requirements**

The method blanks were non-detect (&lt;MDL) for all analytes. No problems encountered.

**7. Internal Standard(s) Response Requirements**

No problems encountered.

**8. Comments**

No problems encountered.

**I certify that this data package is in compliance with the terms and conditions of the contract. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee.**

Approved by: \_\_\_\_\_

*John W. Cuth*



# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

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

**Batch #:** 080815026  
**Project Name:** 0808241

## Analytical Results Report

<b>Sample Number</b>	080815026-001	<b>Sampling Date</b>	8/13/2008	<b>Date/Time Received</b>	8/15/2008 10:45 AM
<b>Client Sample ID</b>	0808241-01F / MW-34	<b>Sampling Time</b>	1:20 PM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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Printed on: 5 September 2008 11:26:21

# Anatek Labs, Inc.

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

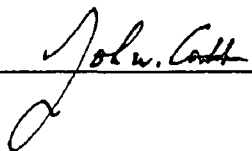
**Batch #:** 080815026  
**Project Name:** 0808241

## Analytical Results Report

<b>Sample Number</b>	080815026-002	<b>Sampling Date</b>	8/13/2008	<b>Date/Time Received</b>	8/15/2008 10:45 AM
<b>Client Sample ID</b>	0808241-02F / MW-35	<b>Sampling Time</b>	1:45 PM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

Authorized Signature



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

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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# Anatek Labs, Inc.

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

**Batch #:** 080815026  
**Project Name:** 0808241

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dissolved Uranium	0.0503	mg/L	0.05	100.6	85-115	8/27/2008	8/27/2008

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
080820024-002	Dissolved Uranium	0.00165	0.0552	mg/L	0.05	107.1	75-125	8/27/2008	8/27/2008

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dissolved Uranium	0.0578	mg/L	0.05	112.3	4.6	0-20	8/27/2008	8/27/2008

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	8/27/2008

AR Acceptable Range  
ND Not Detected  
PQL Practical Quantitation Limit  
RPD Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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Printed on: 5 September 2008 11:26:21

# Hall Environmental Analysis Laboratory, Inc.

18-Sep-08

Lab Order: 0808241

Client: Western Refining Southwest, Inc.

Project: Down-Gradient Wells Annual Aug

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808241-01A	MW-34	8/13/2008 1:20:00 PM	Aqueous	EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29824		8/18/2008
				EPA Method 8260B: VOLATILES	R29824		8/18/2008
				EPA Method 8260B: VOLATILES	R29803		8/15/2008
0808241-01B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/21/2008
0808241-01C				Carbon Dioxide	R29884		8/22/2008
				EPA Method 300.0: Anions	R29800		8/14/2008
				EPA Method 300.0: Anions	R29800		8/14/2008
				SM 2320B: Alkalinity	R29866		8/21/2008
0808241-01D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808241-01E				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
0808241-02A	MW-35	8/13/2008 1:45:00 PM		EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29824		8/18/2008
				EPA Method 8260B: VOLATILES	R29803		8/15/2008
0808241-02B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/21/2008
0808241-02C				Carbon Dioxide	R29884		8/22/2008
				EPA Method 300.0: Anions	R29800		8/14/2008
				EPA Method 300.0: Anions	R29800		8/14/2008

Lab Order: 0808241

Client: Western Refining Southwest, Inc.

Project: Down-Gradient Wells Annual Aug

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808241-02C	MW-35	8/13/2008 1:45:00 PM	Aqueous	SM 2320B: Alkalinity	R29866		8/21/2008
0808241-02D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808241-02E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
0808241-03A	Trip Blank		Trip Blank	EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29803		8/16/2008

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

## Method: EPA Method 300.0: Anions

Sample ID: 0808241-02CMSD			MSD			Batch ID: R29800		Analysis Date: 8/14/2008 11:57:39 PM	
Fluoride	1.306	mg/L	0.10	109	65.1	121	0.190	20	
Nitrogen, Nitrite (As N)	0.9337	mg/L	0.10	93.4	52.9	128	3.95	20	
Nitrogen, Nitrate (As N)	2.528	mg/L	0.10	99.5	83.8	112	1.93	20	
Phosphorus, Orthophosphate (As P)	4.736	mg/L	0.50	94.7	77.6	118	2.90	20	
Sulfate	14.10	mg/L	0.50	105	59.4	126	2.09	20	

## Sample ID: MB

Fluoride	ND	mg/L	0.10
Chloride	ND	mg/L	0.10
Nitrogen, Nitrite (As N)	ND	mg/L	0.10
Nitrogen, Nitrate (As N)	ND	mg/L	0.10
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50
Sulfate	ND	mg/L	0.50

## Sample ID: LCS

Fluoride	0.4662	mg/L	0.10	93.2	90	110
Chloride	5.081	mg/L	0.10	102	90	110
Nitrogen, Nitrite (As N)	1.038	mg/L	0.10	104	90	110
Nitrogen, Nitrate (As N)	2.577	mg/L	0.10	103	90	110
Phosphorus, Orthophosphate (As P)	4.920	mg/L	0.50	98.4	90	110
Sulfate	10.61	mg/L	0.50	106	90	110

## Sample ID: 0808241-02CMS

Fluoride	1.303	mg/L	0.10	108	65.1	121
Nitrogen, Nitrite (As N)	0.8975	mg/L	0.10	89.7	52.9	128
Nitrogen, Nitrate (As N)	2.480	mg/L	0.10	97.6	83.8	112
Phosphorus, Orthophosphate (As P)	4.601	mg/L	0.50	92.0	77.6	118
Sulfate	13.81	mg/L	0.50	102	59.4	126

## Method: SM 2320B: Alkalinity

Sample ID: MB		MBLK		Batch ID: R29866		Analysis Date: 8/21/2008	
Alkalinity, Total (As CaCO3)	ND	mg/L CaC	20				
Carbonate	ND	mg/L CaC	2.0				
Bicarbonate	ND	mg/L CaC	20				
Sample ID: LCS		LCS		Batch ID: R29866		Analysis Date: 8/21/2008	
Alkalinity, Total (As CaCO3)	82.00	mg/L CaC	20	101	80	120	

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 8015B: Diesel Range</b>									
<b>Sample ID: MB-16802</b>		<i>MBLK</i>							
					Batch ID: 16802		Analysis Date: 8/18/2008 9:18:03 AM		
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Surr: DNOP	1.225	mg/L	0	123	58	140			
<b>Sample ID: LCS-16802</b>		<i>LCS</i>							
					Batch ID: 16802		Analysis Date: 8/18/2008 9:51:32 AM		
Diesel Range Organics (DRO)	4.911	mg/L	1.0	98.2	74	157			
Surr: DNOP	0.5625	mg/L	0	113	58	140			
<b>Sample ID: LCSD-16802</b>		<i>LCSD</i>							
					Batch ID: 16802		Analysis Date: 8/18/2008 10:25:06 AM		
Diesel Range Organics (DRO)	4.761	mg/L	1.0	95.2	74	157	3.10	23	
Surr: DNOP	0.5491	mg/L	0	110	58	140	0	0	

<b>Method: EPA Method 8015B: Gasoline Range</b>									
<b>Sample ID: 5ML RB</b>		<i>MBLK</i>							
					Batch ID: R29921		Analysis Date: 8/25/2008 9:06:48 AM		
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	20.37	mg/L	0	102	79.2	121			
<b>Sample ID: 5ML RB</b>		<i>MBLK</i>							
					Batch ID: R29921		Analysis Date: 8/25/2008 9:06:48 AM		
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	20.37	mg/L	0	102	79.2	121			
<b>Sample ID: 5ML RB</b>		<i>MBLK</i>							
					Batch ID: R29921		Analysis Date: 8/26/2008 2:59:23 PM		
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	17.58	mg/L	0	87.9	79.2	121			
<b>Sample ID: LCS-GRO</b>		<i>LCS</i>							
					Batch ID: R29921		Analysis Date: 8/25/2008 5:25:30 PM		
Gasoline Range Organics (GRO)	0.5666	mg/L	0.050	113	80	115			
Surr: BFB	21.15	mg/L	0	106	79.2	121			
<b>Sample ID: LCS-GRO</b>		<i>LCS</i>							
					Batch ID: R29921		Analysis Date: 8/25/2008 5:25:30 PM		
Gasoline Range Organics (GRO)	0.5666	mg/L	0.050	113	80	115			
Surr: BFB	21.15	mg/L	0	106	79.2	121			
<b>Sample ID: LCS-GRO</b>		<i>LCS</i>							
					Batch ID: R29921		Analysis Date: 8/26/2008 4:30:47 PM		
Gasoline Range Organics (GRO)	0.4266	mg/L	0.050	85.3	80	115			
Surr: BFB	17.61	mg/L	0	88.0	79.2	121			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29803 Analysis Date: 8/15/2008 10:31:04 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29803 Analysis Date: 8/15/2008 10:31:04 AM

4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5
Surr: 1,2-Dichloroethane-d4	9.460	µg/L	0
Surr: 4-Bromofluorobenzene	10.49	µg/L	0
Surr: Dibromofluoromethane	9.672	µg/L	0
Surr: Toluene-d8	10.21	µg/L	0

Sample ID: 5ml rb

MBLK

Batch ID: R29824 Analysis Date: 8/18/2008 10:15:36 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29824 Analysis Date: 8/18/2008 10:15:36 AM

Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb		MBLK		Batch ID: R29824		Analysis Date: 8/18/2008 10:15:36 AM	
1,2,3-Trichloropropane	ND	µg/L	2.0				
Vinyl chloride	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	1.5				
Surr: 1,2-Dichloroethane-d4	9.448	µg/L	0	94.5	68.1	123	
Surr: 4-Bromofluorobenzene	10.40	µg/L	0	104	53.2	145	
Surr: Dibromofluoromethane	9.891	µg/L	0	98.9	68.5	119	
Surr: Toluene-d8	9.648	µg/L	0	96.5	64	131	

Sample ID: b7	MBLK	Batch ID: R29824	Analysis Date: 8/18/2008 9:37:52 PM
Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b7

MBLK

Batch ID: R29824 Analysis Date: 8/18/2008 9:37:52 PM

1,2-Dichloropropane	ND	µg/L	1.0						
1,3-Dichloropropane	ND	µg/L	1.0						
2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	µg/L	1.0						
Hexachlorobutadiene	ND	µg/L	1.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	µg/L	1.0						
4-Isopropyltoluene	ND	µg/L	1.0						
4-Methyl-2-pentanone	ND	µg/L	10						
Methylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	1.0						
Styrene	ND	µg/L	1.0						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.424	µg/L	0	94.2	68.1	123			
Surr: 4-Bromofluorobenzene	10.87	µg/L	0	109	53.2	145			
Surr: Dibromofluoromethane	9.412	µg/L	0	94.1	68.5	119			
Surr: Toluene-d8	9.509	µg/L	0	95.1	64	131			

Sample ID: 100ng Ics\_b

LCS

Batch ID: R29803 Analysis Date: 8/15/2008 2:41:00 PM

Benzene	20.15	µg/L	1.0	101	86.8	120			
Toluene	20.41	µg/L	1.0	102	64.1	127			
Chlorobenzene	22.97	µg/L	1.0	115	82.4	113			S
1,1-Dichloroethene	24.69	µg/L	1.0	123	86.5	132			
Trichloroethene (TCE)	19.38	µg/L	1.0	96.9	77.3	123			
Surr: 1,2-Dichloroethane-d4	9.330	µg/L	0	93.3	68.1	123			
Surr: 4-Bromofluorobenzene	9.792	µg/L	0	97.9	53.2	145			
Surr: Dibromofluoromethane	9.599	µg/L	0	96.0	68.5	119			
Surr: Toluene-d8	9.648	µg/L	0	96.5	64	131			

Sample ID: 100ng Ics

LCS

Batch ID: R29824 Analysis Date: 8/18/2008 11:19:55 AM

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 100ng lcs		LCS			Batch ID: R29824		Analysis Date: 8/18/2008 11:19:55 AM	
Benzene	20.71	µg/L	1.0	104	86.8	120		
Toluene	20.33	µg/L	1.0	102	64.1	127		
Chlorobenzene	22.04	µg/L	1.0	110	82.4	113		
1,1-Dichloroethene	24.64	µg/L	1.0	123	86.5	132		
Trichloroethene (TCE)	19.74	µg/L	1.0	98.7	77.3	123		
Surr: 1,2-Dichloroethane-d4	9.319	µg/L	0	93.2	68.1	123		
Surr: 4-Bromofluorobenzene	10.14	µg/L	0	101	53.2	145		
Surr: Dibromofluoromethane	9.536	µg/L	0	95.4	68.5	119		
Surr: Toluene-d8	9.273	µg/L	0	92.7	64	131		

Sample ID: 100ng lcs		LCS			Batch ID: R29824		Analysis Date: 8/18/2008 10:35:23 PM	
Benzene	21.32	µg/L	1.0	107	86.8	120		
Toluene	18.86	µg/L	1.0	94.3	64.1	127		
Chlorobenzene	21.47	µg/L	1.0	107	82.4	113		
1,1-Dichloroethene	24.68	µg/L	1.0	123	86.5	132		
Trichloroethene (TCE)	21.02	µg/L	1.0	105	77.3	123		
Surr: 1,2-Dichloroethane-d4	9.386	µg/L	0	93.9	68.1	123		
Surr: 4-Bromofluorobenzene	10.82	µg/L	0	108	53.2	145		
Surr: Dibromofluoromethane	9.762	µg/L	0	97.6	68.5	119		
Surr: Toluene-d8	9.388	µg/L	0	93.9	64	131		

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16804

MBLK

Batch ID:

16804

Analysis Date:

8/21/2008

Acenaphthene	ND	µg/L	10
Acenaphthylene	ND	µg/L	10
Aniline	ND	µg/L	10
Anthracene	ND	µg/L	10
Azobenzene	ND	µg/L	10
Benz(a)anthracene	ND	µg/L	10
Benzo(a)pyrene	ND	µg/L	10
Benzo(b)fluoranthene	ND	µg/L	10
Benzo(g,h,i)perylene	ND	µg/L	10
Benzo(k)fluoranthene	ND	µg/L	10
Benzoic acid	ND	µg/L	20
Benzyl alcohol	ND	µg/L	10
Bis(2-chloroethoxy)methane	ND	µg/L	10
Bis(2-chloroethyl)ether	ND	µg/L	10
Bis(2-chloroisopropyl)ether	ND	µg/L	10
Bis(2-ethylhexyl)phthalate	ND	µg/L	10
4-Bromophenyl phenyl ether	ND	µg/L	10
Butyl benzyl phthalate	ND	µg/L	10
Carbazole	ND	µg/L	10
4-Chloro-3-methylphenol	ND	µg/L	10
4-Chloroaniline	ND	µg/L	10
2-Chloronaphthalene	ND	µg/L	10
2-Chlorophenol	ND	µg/L	10
4-Chlorophenyl phenyl ether	ND	µg/L	10
Chrysene	ND	µg/L	10
Di-n-butyl phthalate	ND	µg/L	10
Di-n-octyl phthalate	ND	µg/L	10
Dibenz(a,h)anthracene	ND	µg/L	10
Dibenzofuran	ND	µg/L	10
1,2-Dichlorobenzene	ND	µg/L	10
1,3-Dichlorobenzene	ND	µg/L	10
1,4-Dichlorobenzene	ND	µg/L	10
3,3'-Dichlorobenzidine	ND	µg/L	10
Diethyl phthalate	ND	µg/L	10
Dimethyl phthalate	ND	µg/L	10
2,4-Dichlorophenol	ND	µg/L	20
2,4-Dimethylphenol	ND	µg/L	10
4,6-Dinitro-2-methylphenol	ND	µg/L	20
2,4-Dinitrophenol	ND	µg/L	20
2,4-Dinitrotoluene	ND	µg/L	10
2,6-Dinitrotoluene	ND	µg/L	10
Fluoranthene	ND	µg/L	10
Fluorene	ND	µg/L	10
Hexachlorobenzene	ND	µg/L	10

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16804 MBLK Batch ID: 16804 Analysis Date: 8/21/2008

Hexachlorobutadiene	ND	µg/L	10						
Hexachlorocyclopentadiene	ND	µg/L	10						
Hexachloroethane	ND	µg/L	10						
Indeno(1,2,3-cd)pyrene	ND	µg/L	10						
Isophorone	ND	µg/L	10						
2-Methylnaphthalene	ND	µg/L	10						
2-Methylphenol	ND	µg/L	10						
3+4-Methylphenol	ND	µg/L	10						
N-Nitrosodi-n-propylamine	ND	µg/L	10						
N-Nitrosodimethylamine	ND	µg/L	10						
N-Nitrosodiphenylamine	ND	µg/L	10						
Naphthalene	ND	µg/L	10						
2-Nitroaniline	ND	µg/L	10						
3-Nitroaniline	ND	µg/L	10						
4-Nitroaniline	ND	µg/L	10						
Nitrobenzene	ND	µg/L	10						
2-Nitrophenol	ND	µg/L	10						
4-Nitrophenol	ND	µg/L	10						
Pentachlorophenol	ND	µg/L	40						
Phenanthrene	ND	µg/L	10						
Phenol	ND	µg/L	10						
Pyrene	ND	µg/L	10						
Pyridine	ND	µg/L	10						
1,2,4-Trichlorobenzene	ND	µg/L	10						
2,4,5-Trichlorophenol	ND	µg/L	10						
2,4,6-Trichlorophenol	ND	µg/L	10						
Surr: 2,4,6-Tribromophenol	130.0	µg/L	0	65.0	16.6	150			
Surr: 2-Fluorobiphenyl	71.08	µg/L	0	71.1	19.6	134			
Surr: 2-Fluorophenol	119.1	µg/L	0	59.6	9.54	113			
Surr: 4-Terphenyl-d14	66.70	µg/L	0	66.7	22.7	145			
Surr: Nitrobenzene-d5	70.06	µg/L	0	70.1	14.6	134			
Surr: Phenol-d5	88.94	µg/L	0	44.5	10.7	80.3			

Sample ID: lcs-16804 LCS Batch ID: 16804 Analysis Date: 8/21/2008

Acenaphthene	43.66	µg/L	10	43.7	11	123			
4-Chloro-3-methylphenol	102.0	µg/L	10	50.1	15.4	119			
2-Chlorophenol	95.42	µg/L	10	46.7	12.2	122			
1,4-Dichlorobenzene	37.00	µg/L	10	37.0	16.9	100			
2,4-Dinitrotoluene	43.10	µg/L	10	43.1	13	138			
N-Nitrosodi-n-propylamine	50.50	µg/L	10	50.5	9.93	122			
4-Nitrophenol	67.84	µg/L	10	33.9	12.5	87.4			
Pentachlorophenol	91.04	µg/L	40	45.5	3.55	114			
Phenol	70.52	µg/L	10	35.3	7.53	73.1			
Pyrene	52.60	µg/L	10	52.6	12.6	140			
1,2,4-Trichlorobenzene	38.40	µg/L	10	38.4	17.4	98.7			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8270C: Semivolatiles

Sample ID: Ics-16804 LCS Batch ID: 16804 Analysis Date: 8/21/2008

Surr: 2,4,6-Tribromophenol	85.24	µg/L	0	42.6	16.6	150			
Surr: 2-Fluorobiphenyl	47.88	µg/L	0	47.9	19.6	134			
Surr: 2-Fluorophenol	84.44	µg/L	0	42.2	9.54	113			
Surr: 4-Terphenyl-d14	45.86	µg/L	0	45.9	22.7	145			
Surr: Nitrobenzene-d5	49.30	µg/L	0	49.3	14.6	134			
Surr: Phenol-d5	71.26	µg/L	0	35.6	10.7	80.3			

Sample ID: Icsd-16804 LCSD Batch ID: 16804 Analysis Date: 8/21/2008

Acenaphthene	51.78	µg/L	10	51.8	11	123	17.0	30.5	
4-Chloro-3-methylphenol	120.8	µg/L	10	59.5	15.4	119	16.9	28.6	
2-Chlorophenol	112.9	µg/L	10	55.5	12.2	122	16.8	107	
1,4-Dichlorobenzene	42.48	µg/L	10	42.5	16.9	100	13.8	62.1	
2,4-Dinitrotoluene	50.30	µg/L	10	50.3	13	138	15.4	14.7	R
N-Nitrosodi-n-propylamine	58.30	µg/L	10	58.3	9.93	122	14.3	30.3	
4-Nitrophenol	92.10	µg/L	10	46.0	12.5	87.4	30.3	36.3	
Pentachlorophenol	103.7	µg/L	40	51.9	3.55	114	13.0	49	
Phenol	90.88	µg/L	10	45.4	7.53	73.1	25.2	52.4	
Pyrene	60.08	µg/L	10	60.1	12.6	140	13.3	16.3	
1,2,4-Trichlorobenzene	45.64	µg/L	10	45.6	17.4	98.7	17.2	36.4	
Surr: 2,4,6-Tribromophenol	97.70	µg/L	0	48.9	16.6	150	0	0	
Surr: 2-Fluorobiphenyl	55.80	µg/L	0	55.8	19.6	134	0	0	
Surr: 2-Fluorophenol	102.9	µg/L	0	51.5	9.54	113	0	0	
Surr: 4-Terphenyl-d14	50.72	µg/L	0	50.7	22.7	145	0	0	
Surr: Nitrobenzene-d5	56.00	µg/L	0	56.0	14.6	134	0	0	
Surr: Phenol-d5	90.52	µg/L	0	45.3	10.7	80.3	0	0	

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 6010B: Dissolved Metals

Sample ID: MB MBLK Batch ID: R29998 Analysis Date: 8/29/2008 1:18:16 PM

Arsenic	ND	mg/L	0.020
Barium	ND	mg/L	0.020
Cadmium	ND	mg/L	0.0020
Chromium	ND	mg/L	0.0060
Copper	ND	mg/L	0.0060
Iron	ND	mg/L	0.020
Lead	ND	mg/L	0.0050
Manganese	ND	mg/L	0.0020
Selenium	ND	mg/L	0.050
Silver	ND	mg/L	0.0050
Zinc	ND	mg/L	0.050

Sample ID: MB MBLK Batch ID: R29998 Analysis Date: 8/29/2008 3:30:02 PM

Arsenic	ND	mg/L	0.020
Barium	ND	mg/L	0.020
Cadmium	ND	mg/L	0.0020
Chromium	ND	mg/L	0.0060
Copper	ND	mg/L	0.0060
Iron	ND	mg/L	0.020
Lead	ND	mg/L	0.0050
Manganese	ND	mg/L	0.0020
Selenium	ND	mg/L	0.050
Silver	ND	mg/L	0.0050

Sample ID: MB MBLK Batch ID: R30124 Analysis Date: 9/8/2008 9:44:53 PM

Selenium	ND	mg/L	0.050
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Sample ID: LCS LCS Batch ID: R29998 Analysis Date: 8/29/2008 1:21:07 PM

Arsenic	0.5042	mg/L	0.020	101	80	120
Barium	0.5032	mg/L	0.020	101	80	120
Cadmium	0.5164	mg/L	0.0020	103	80	120
Chromium	0.5062	mg/L	0.0060	101	80	120
Copper	0.4904	mg/L	0.0060	98.1	80	120
Iron	0.5268	mg/L	0.020	105	80	120
Lead	0.5188	mg/L	0.0050	104	80	120
Manganese	0.5008	mg/L	0.0020	100	80	120
Selenium	0.5137	mg/L	0.050	103	80	120
Silver	0.5081	mg/L	0.0050	102	80	120
Zinc	0.5096	mg/L	0.050	102	80	120

Sample ID: LCS LCS Batch ID: R29998 Analysis Date: 8/29/2008 3:32:53 PM

Arsenic	0.5219	mg/L	0.020	104	80	120
Barium	0.5196	mg/L	0.020	104	80	120
Cadmium	0.5339	mg/L	0.0020	107	80	120
Chromium	0.5264	mg/L	0.0060	105	80	120
Copper	0.5107	mg/L	0.0060	102	80	120
Iron	0.5102	mg/L	0.020	102	80	120

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

**Client:** Western Refining Southwest, Inc.  
**Project:** Down-Gradient Wells Annual Aug 2008

**Work Order:** 0808241

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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**Method:** EPA Method 6010B: Dissolved Metals

<b>Sample ID:</b> LCS	LCS				Batch ID:	R29998	Analysis Date:	8/29/2008 3:32:53 PM
Lead	0.5421	mg/L	0.0050	108	80	120		
Manganese	0.5171	mg/L	0.0020	103	80	120		
Selenium	0.5360	mg/L	0.050	107	80	120		
Silver	0.5257	mg/L	0.0050	105	80	120		
<b>Sample ID:</b> LCS	LCS				Batch ID:	R30124	Analysis Date:	9/8/2008 9:47:18 PM
Selenium	0.5051	mg/L	0.050	101	80	120		

**Method:** EPA 6010B: Total Recoverable Metals

<b>Sample ID:</b> MB-16876	MBLK				Batch ID:	16876	Analysis Date:	8/28/2008 11:55:26 AM
Arsenic	ND	mg/L	0.020					
Barium	ND	mg/L	0.010					
Cadmium	ND	mg/L	0.0020					
Chromium	ND	mg/L	0.0060					
Lead	ND	mg/L	0.0050					
Selenium	ND	mg/L	0.050					
Silver	ND	mg/L	0.0050					
<b>Sample ID:</b> MB-16876	MBLK				Batch ID:	16876	Analysis Date:	9/2/2008 10:17:34 AM
Barium	ND	mg/L	0.010					
Cadmium	ND	mg/L	0.0020					
Chromium	ND	mg/L	0.0060					
Lead	ND	mg/L	0.0050					
Silver	ND	mg/L	0.0050					
<b>Sample ID:</b> MB-16876	MBLK				Batch ID:	16876	Analysis Date:	9/2/2008 12:52:59 PM
Arsenic	ND	mg/L	0.020					
Selenium	ND	mg/L	0.050					
<b>Sample ID:</b> LCS-16876	LCS				Batch ID:	16876	Analysis Date:	8/28/2008 11:57:19 AM
Arsenic	0.4914	mg/L	0.020	98.3	80	120		
Barium	0.4796	mg/L	0.010	95.9	80	120		
Cadmium	0.4924	mg/L	0.0020	98.5	80	120		
Chromium	0.4942	mg/L	0.0060	98.8	80	120		
Lead	0.4785	mg/L	0.0050	95.0	80	120		
Selenium	0.4934	mg/L	0.050	98.7	80	120		
Silver	0.4969	mg/L	0.0050	99.4	80	120		
<b>Sample ID:</b> LCS-16876	LCS				Batch ID:	16876	Analysis Date:	9/2/2008 10:19:54 AM
Barium	0.4752	mg/L	0.010	95.0	80	120		
Cadmium	0.4758	mg/L	0.0020	95.2	80	120		
Chromium	0.4812	mg/L	0.0060	96.2	80	120		
Lead	0.4736	mg/L	0.0050	94.7	80	120		
Silver	0.4784	mg/L	0.0050	95.7	80	120		
<b>Sample ID:</b> LCS-16876	LCS				Batch ID:	16876	Analysis Date:	9/2/2008 12:55:29 PM
Arsenic	0.4782	mg/L	0.020	95.6	80	120		
Selenium	0.4710	mg/L	0.050	94.2	80	120		

**Qualifiers:**

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

080815 026 27/2008  
 1st SAMP 8/13/2008 1st RCVD 8/15/2008

CHAN-OF-CUSTO 0808241

Hall Environmental Analysis Laboratory, Inc.  
 4901 Hawkins NE, Suite D  
 Albuquerque, New Mexico 87109-4372

TEL: 5053453975 FAX: 5053454107

Subcontractor:

Anatek Labs, Inc.  
 1282 Alturas Dr  
 Moscow, ID 83843

TEL: (208) 883-2839  
 FAX: (208) 882-9246  
 Acct #:

Project Name: 0808241

14-Aug-08

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0808241-01F	MW-34	Aqueous	8/13/2008 1:20:00 PM	125HDPHNO3	SEE BELOW
0808241-02F	MW-35	Aqueous	8/13/2008 1:45:00 PM	125HDPHNO3	SEE BELOW

WUBS

ANALYTICAL LEVEL 4 QA/QC FOR DISSOLVED U BY 6020, PLEASE REPORT @ 0.001 mg/L

COMMENTS:

Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

Relinquished by: [Signature] Date/Time: 8/14/08 Receive  
 Relinquished by: \_\_\_\_\_ Receive

ANATEK LABS RECEIVING LIST

RECEIVED INTACT ☒ LABELS & CHAINS AGREE ☒ NO HEADSPACE ☒ PRESERVATIVE: 44003 TEMP: 4.1 °C

NUMBER OF CONTAINERS: 2 SHIPPED VIA: FedEx  
 DATE & TIME: 8-15-08 (0:15) INSPECTED BY: [Signature]

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

## Login Report

**Customer Name:** HALL ENVIRONMENTAL ANALYSIS LAB

**Order ID:** 080815026

**Purchase Order:**

**Order Date:** 8/15/2008

**Project ID:**

**Project Name:** 0808241

**Comment:**

**Sample #:** 080815026-001 **Customer Sample #:** 0808241-01F / MW-34 **Site:**

**Recv'd:** ☒ **Collector:** **Date Collected:** 8/13/2008  
**Quantity:** 1 **Matrix:** Water **Date Received:** 8/15/2008 10:45:00 A  
**Comment:**

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/27/2008	<u>Normal (6-10 Days)</u>

**Sample #:** 080815026-002 **Customer Sample #:** 0808241-02F / MW-35 **Site:**

**Recv'd:** ☒ **Collector:** **Date Collected:** 8/13/2008  
**Quantity:** 1 **Matrix:** Water **Date Received:** 8/15/2008 10:45:00 A  
**Comment:**

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/27/2008	<u>Normal (6-10 Days)</u>

## SAMPLE CONDITION RECORD

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature inside the cooler?	4.1
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	N/A
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/14/2008

Work Order Number 0808241

Received by: TLS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☒

No ☐

N/A ☐

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

Container/Temp Blank temperature?

4°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action







## COVER LETTER

Tuesday, September 23, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX: (505) 632-3911

RE: Down-Gradient Wells Annual Aug 2008

Order No.: 0808258

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 8/15/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

A handwritten signature in dark ink, appearing to read "Nancy McDuffie", is written over a horizontal line.

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab Order:** 0808258

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808258-01A	MW-11	R29845	EPA Method 8260B: VOLATILES	8/14/2008 10:00:00 AM
0808258-01A	MW-11	R29845	EPA Method 8260B: VOLATILES	8/14/2008 10:00:00 AM
0808258-01A	MW-11	R29921	EPA Method 8015B: Gasoline Range	8/14/2008 10:00:00 AM
0808258-01A	MW-11	R29921	EPA Method 8015B: Gasoline Range	8/14/2008 10:00:00 AM
0808258-01A	MW-11	16802	EPA Method 8015B: Diesel Range	8/14/2008 10:00:00 AM
0808258-01B	MW-11	16804	EPA Method 8270C: Semivolatiles	8/14/2008 10:00:00 AM
0808258-01C	MW-11	R29883	SM 2320B: Alkalinity	8/14/2008 10:00:00 AM
0808258-01C	MW-11	R29886	Carbon Dioxide	8/14/2008 10:00:00 AM
0808258-01C	MW-11	R29808	EPA Method 300.0: Anions	8/14/2008 10:00:00 AM
0808258-01C	MW-11	R29808	EPA Method 300.0: Anions	8/14/2008 10:00:00 AM
0808258-01C	MW-11	R30109	EPA Method 300.0: Anions	8/14/2008 10:00:00 AM
0808258-01D	MW-11	16906	EPA Method 7470: Mercury	8/14/2008 10:00:00 AM
0808258-01D	MW-11	16876	EPA 6010B: Total Recoverable Metals	8/14/2008 10:00:00 AM
0808258-01E	MW-11	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 10:00:00 AM
0808258-01E	MW-11	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 10:00:00 AM
0808258-01E	MW-11	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 10:00:00 AM
0808258-01E	MW-11	R30124	EPA Method 6010B: Dissolved Metals	8/14/2008 10:00:00 AM
0808258-02A	MW-12	R29845	EPA Method 8260B: VOLATILES	8/14/2008 11:00:00 AM
0808258-02A	MW-12	R29921	EPA Method 8015B: Gasoline Range	8/14/2008 11:00:00 AM
0808258-02A	MW-12	16802	EPA Method 8015B: Diesel Range	8/14/2008 11:00:00 AM
0808258-02B	MW-12	16804	EPA Method 8270C: Semivolatiles	8/14/2008 11:00:00 AM
0808258-02C	MW-12	R29808	EPA Method 300.0: Anions	8/14/2008 11:00:00 AM
0808258-02C	MW-12	R29808	EPA Method 300.0: Anions	8/14/2008 11:00:00 AM
0808258-02C	MW-12	R29883	SM 2320B: Alkalinity	8/14/2008 11:00:00 AM
0808258-02C	MW-12	R29886	Carbon Dioxide	8/14/2008 11:00:00 AM
0808258-02D	MW-12	16906	EPA Method 7470: Mercury	8/14/2008 11:00:00 AM
0808258-02D	MW-12	16876	EPA 6010B: Total Recoverable Metals	8/14/2008 11:00:00 AM
0808258-02E	MW-12	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 11:00:00 AM
0808258-02E	MW-12	R30124	EPA Method 6010B: Dissolved Metals	8/14/2008 11:00:00 AM
0808258-03A	MW-37	R29845	EPA Method 8260B: VOLATILES	8/14/2008 11:20:00 AM
0808258-03A	MW-37	R29845	EPA Method 8260B: VOLATILES	8/14/2008 11:20:00 AM
0808258-03A	MW-37	R29921	EPA Method 8015B: Gasoline Range	8/14/2008 11:20:00 AM
0808258-03A	MW-37	16802	EPA Method 8015B: Diesel Range	8/14/2008 11:20:00 AM
0808258-03B	MW-37	16804	EPA Method 8270C: Semivolatiles	8/14/2008 11:20:00 AM
0808258-03C	MW-37	R29886	Carbon Dioxide	8/14/2008 11:20:00 AM
0808258-03C	MW-37	R29808	EPA Method 300.0: Anions	8/14/2008 11:20:00 AM
0808258-03C	MW-37	R29808	EPA Method 300.0: Anions	8/14/2008 11:20:00 AM
0808258-03C	MW-37	R29883	SM 2320B: Alkalinity	8/14/2008 11:20:00 AM

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab Order:** 0808258

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808258-03D	MW-37	16876	EPA 6010B: Total Recoverable Metals	8/14/2008 11:20:00 AM
0808258-03D	MW-37	16906	EPA Method 7470: Mercury	8/14/2008 11:20:00 AM
0808258-03E	MW-37	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 11:20:00 AM
0808258-03E	MW-37	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 11:20:00 AM
0808258-03E	MW-37	R30124	EPA Method 6010B: Dissolved Metals	8/14/2008 11:20:00 AM
0808258-04A	MW-38	16802	EPA Method 8015B: Diesel Range	8/14/2008 11:50:00 AM
0808258-04A	MW-38	R29845	EPA Method 8260B: VOLATILES	8/14/2008 11:50:00 AM
0808258-04A	MW-38	R29845	EPA Method 8260B: VOLATILES	8/14/2008 11:50:00 AM
0808258-04A	MW-38	R29921	EPA Method 8015B: Gasoline Range	8/14/2008 11:50:00 AM
0808258-04B	MW-38	16804	EPA Method 8270C: Semivolatiles	8/14/2008 11:50:00 AM
0808258-04C	MW-38	R29886	Carbon Dioxide	8/14/2008 11:50:00 AM
0808258-04C	MW-38	R29883	SM 2320B: Alkalinity	8/14/2008 11:50:00 AM
0808258-04C	MW-38	R29808	EPA Method 300.0: Anions	8/14/2008 11:50:00 AM
0808258-04C	MW-38	R29808	EPA Method 300.0: Anions	8/14/2008 11:50:00 AM
0808258-04D	MW-38	16906	EPA Method 7470: Mercury	8/14/2008 11:50:00 AM
0808258-04D	MW-38	16876	EPA 6010B: Total Recoverable Metals	8/14/2008 11:50:00 AM
0808258-04E	MW-38	R30124	EPA Method 6010B: Dissolved Metals	8/14/2008 11:50:00 AM
0808258-04E	MW-38	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 11:50:00 AM
0808258-04E	MW-38	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 11:50:00 AM
0808258-05A	MW-11 FD	R29921	EPA Method 8015B: Gasoline Range	8/14/2008 10:15:00 AM
0808258-05A	MW-11 FD	R29921	EPA Method 8015B: Gasoline Range	8/14/2008 10:15:00 AM
0808258-05A	MW-11 FD	16802	EPA Method 8015B: Diesel Range	8/14/2008 10:15:00 AM
0808258-05A	MW-11 FD	R29845	EPA Method 8260B: VOLATILES	8/14/2008 10:15:00 AM
0808258-05A	MW-11 FD	R29845	EPA Method 8260B: VOLATILES	8/14/2008 10:15:00 AM
0808258-05B	MW-11 FD	16804	EPA Method 8270C: Semivolatiles	8/14/2008 10:15:00 AM
0808258-05C	MW-11 FD	R29886	Carbon Dioxide	8/14/2008 10:15:00 AM
0808258-05C	MW-11 FD	R29808	EPA Method 300.0: Anions	8/14/2008 10:15:00 AM
0808258-05C	MW-11 FD	R29808	EPA Method 300.0: Anions	8/14/2008 10:15:00 AM
0808258-05C	MW-11 FD	R29883	SM 2320B: Alkalinity	8/14/2008 10:15:00 AM
0808258-05D	MW-11 FD	16906	EPA Method 7470: Mercury	8/14/2008 10:15:00 AM
0808258-05D	MW-11 FD	16876	EPA 6010B: Total Recoverable Metals	8/14/2008 10:15:00 AM
0808258-05E	MW-11 FD	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 10:15:00 AM
0808258-05E	MW-11 FD	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 10:15:00 AM
0808258-05E	MW-11 FD	R29998	EPA Method 6010B: Dissolved Metals	8/14/2008 10:15:00 AM
0808258-05E	MW-11 FD	R30124	EPA Method 6010B: Dissolved Metals	8/14/2008 10:15:00 AM
0808258-06A	Field Blank	R29845	EPA Method 8260B: VOLATILES	8/14/2008 11:45:00 AM
0808258-07A	Trip Blank	R29921	EPA Method 8015B: Gasoline Range	
0808258-07A	Trip Blank	R29845	EPA Method 8260B: VOLATILES	

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-01

**Client Sample ID:** MW-11  
**Collection Date:** 8/14/2008 10:00:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.57	0.10		mg/L	1	8/15/2008 6:31:53 PM
Chloride	110	1.0		mg/L	10	9/5/2008 1:50:16 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 6:31:53 PM
Bromide	1.4	0.10		mg/L	1	8/15/2008 6:31:53 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 6:31:53 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 6:31:53 PM
Sulfate	1.1	0.50		mg/L	1	8/15/2008 6:31:53 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-01

Client Sample ID: MW-11  
 Collection Date: 8/14/2008 10:00:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	9.6	1.0		mg/L	1	8/18/2008 5:12:11 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 5:12:11 PM
Surr: DNOP	126	58-140		%REC	1	8/18/2008 5:12:11 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	3.4	0.10		mg/L	2	8/26/2008 10:40:58 PM
Surr: BFB	422	79.2-121	S	%REC	2	8/26/2008 10:40:58 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.57	0.10		mg/L	1	8/15/2008 6:31:53 PM
Chloride	110	1.0		mg/L	10	9/5/2008 1:50:16 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 6:31:53 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 6:31:53 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 6:31:53 PM
Sulfate	1.1	0.50		mg/L	1	8/15/2008 6:31:53 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:38:43 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 4:00:55 PM
Barium	0.70	0.020		mg/L	1	8/29/2008 4:00:55 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 4:00:55 PM
Chromium	0.0090	0.0060		mg/L	1	8/29/2008 4:00:55 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 4:00:55 PM
Iron	12	1.0		mg/L	50	8/29/2008 4:57:56 PM
Lead	0.0074	0.0050		mg/L	1	8/29/2008 4:00:55 PM
Manganese	1.9	0.010		mg/L	5	8/29/2008 4:55:24 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:23:27 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 4:00:55 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 4:00:55 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:42:20 PM
Barium	0.71	0.020		mg/L	1	8/28/2008 12:42:20 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:42:20 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:42:20 PM
Lead	0.022	0.0050		mg/L	1	8/28/2008 12:42:20 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:42:20 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:42:20 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-01

**Client Sample ID:** MW-11  
**Collection Date:** 8/14/2008 10:00:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

**Qualifiers:**  
 \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit



## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-01

Client Sample ID: MW-11  
 Collection Date: 8/14/2008 10:00:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	10	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	32	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	89.6	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	71.8	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	48.4	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	66.4	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	73.2	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	41.8	10.7-80.3		%REC	1	8/23/2008

**EPA METHOD 8260B: VOLATILES**

Analyst: HL

Benzene	3.8	1.0		µg/L	1	8/19/2008 6:43:34 PM
Toluene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Ethylbenzene	2.2	1.0		µg/L	1	8/19/2008 6:43:34 PM
Methyl tert-butyl ether (MTBE)	19	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,2,4-Trimethylbenzene	860	10		µg/L	10	8/19/2008 10:57:58 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808258  
Project: Down-Gradient Wells Annual Aug 2008  
Lab ID: 0808258-01

Client Sample ID: MW-11  
Collection Date: 8/14/2008 10:00:00 AM  
Date Received: 8/15/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Naphthalene	97	2.0		µg/L	1	8/19/2008 6:43:34 PM
1-Methylnaphthalene	18	4.0		µg/L	1	8/19/2008 6:43:34 PM
2-Methylnaphthalene	28	4.0		µg/L	1	8/19/2008 6:43:34 PM
Acetone	ND	10		µg/L	1	8/19/2008 6:43:34 PM
Bromobenzene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Bromoform	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Bromomethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
2-Butanone	ND	10		µg/L	1	8/19/2008 6:43:34 PM
Carbon disulfide	ND	10		µg/L	1	8/19/2008 6:43:34 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Chlorobenzene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Chloroethane	ND	2.0		µg/L	1	8/19/2008 6:43:34 PM
Chloroform	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Chloromethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/19/2008 6:43:34 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Dibromomethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/19/2008 6:43:34 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
2-Hexanone	ND	10		µg/L	1	8/19/2008 6:43:34 PM
Isopropylbenzene	61	1.0		µg/L	1	8/19/2008 6:43:34 PM
4-Isopropyltoluene	5.2	1.0		µg/L	1	8/19/2008 6:43:34 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/19/2008 6:43:34 PM
Methylene Chloride	ND	3.0		µg/L	1	8/19/2008 6:43:34 PM
n-Butylbenzene	3.1	1.0		µg/L	1	8/19/2008 6:43:34 PM
n-Propylbenzene	60	1.0		µg/L	1	8/19/2008 6:43:34 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-01

**Client Sample ID:** MW-11  
**Collection Date:** 8/14/2008 10:00:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	12	1.0		µg/L	1	8/19/2008 6:43:34 PM
Styrene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
tert-Butylbenzene	2.7	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/19/2008 6:43:34 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/19/2008 6:43:34 PM
Vinyl chloride	ND	1.0		µg/L	1	8/19/2008 6:43:34 PM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2008 6:43:34 PM
Surr: 1,2-Dichloroethane-d4	107	68.1-123		%REC	1	8/19/2008 6:43:34 PM
Surr: 4-Bromofluorobenzene	127	53.2-145		%REC	1	8/19/2008 6:43:34 PM
Surr: Dibromofluoromethane	99.2	68.5-119		%REC	1	8/19/2008 6:43:34 PM
Surr: Toluene-d8	104	64-131		%REC	1	8/19/2008 6:43:34 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1100	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	1100	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1100	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-02

**Client Sample ID:** MW-12  
**Collection Date:** 8/14/2008 11:00:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.50	0.10		mg/L	1	8/15/2008 7:41:31 PM
Chloride	8.3	0.10		mg/L	1	8/15/2008 7:41:31 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 7:41:31 PM
Bromide	ND	0.10		mg/L	1	8/15/2008 7:41:31 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 7:41:31 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 7:41:31 PM
Sulfate	130	5.0		mg/L	10	8/15/2008 7:58:56 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-02

**Client Sample ID:** MW-12  
**Collection Date:** 8/14/2008 11:00:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/18/2008 5:46:19 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 5:46:19 PM
Surr: DNOP	128	58-140		%REC	1	8/18/2008 5:46:19 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/26/2008 2:50:32 AM
Surr: BFB	89.8	79.2-121		%REC	1	8/26/2008 2:50:32 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.50	0.10		mg/L	1	8/15/2008 7:41:31 PM
Chloride	8.3	0.10		mg/L	1	8/15/2008 7:41:31 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 7:41:31 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 7:41:31 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 7:41:31 PM
Sulfate	130	5.0		mg/L	10	8/15/2008 7:58:56 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:40:27 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 4:03:37 PM
Barium	0.060	0.020		mg/L	1	8/29/2008 4:03:37 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 4:03:37 PM
Chromium	0.011	0.0060		mg/L	1	8/29/2008 4:03:37 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 4:03:37 PM
Iron	0.021	0.020		mg/L	1	8/29/2008 4:03:37 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 4:03:37 PM
Manganese	0.065	0.0020		mg/L	1	8/29/2008 4:03:37 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:25:54 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 4:03:37 PM
Zinc	0.095	0.050		mg/L	1	8/29/2008 4:03:37 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:44:50 PM
Barium	0.17	0.020		mg/L	1	8/28/2008 12:44:50 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:44:50 PM
Chromium	0.057	0.0060		mg/L	1	8/28/2008 12:44:50 PM
Lead	ND	0.0050		mg/L	1	8/28/2008 12:44:50 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:44:50 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:44:50 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-02

Client Sample ID: MW-12  
 Collection Date: 8/14/2008 11:00:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## EPA METHOD 8270C: SEMIVOLATILES

Analyst: JDC

Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-02

**Client Sample ID:** MW-12  
**Collection Date:** 8/14/2008 11:00:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## EPA METHOD 8270C: SEMIVOLATILES

Analyst: JDC

Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	ND	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	83.1	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	88.2	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	68.9	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	76.0	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	85.8	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	57.1	10.7-80.3		%REC	1	8/23/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Toluene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Ethylbenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-02

Client Sample ID: MW-12  
 Collection Date: 8/14/2008 11:00:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Naphthalene	ND	2.0		µg/L	1	8/19/2008 11:26:42 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2008 11:26:42 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2008 11:26:42 AM
Acetone	ND	10		µg/L	1	8/19/2008 11:26:42 AM
Bromobenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Bromodichloromethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Bromoform	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Bromomethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
2-Butanone	ND	10		µg/L	1	8/19/2008 11:26:42 AM
Carbon disulfide	ND	10		µg/L	1	8/19/2008 11:26:42 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Chlorobenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Chloroethane	ND	2.0		µg/L	1	8/19/2008 11:26:42 AM
Chloroform	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Chloromethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
2-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
4-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
cis-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/19/2008 11:26:42 AM
Dibromochloromethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Dibromomethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/19/2008 11:26:42 AM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
2-Hexanone	ND	10		µg/L	1	8/19/2008 11:26:42 AM
Isopropylbenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/19/2008 11:26:42 AM
Methylene Chloride	ND	3.0		µg/L	1	8/19/2008 11:26:42 AM
n-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
n-Propylbenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-02

Client Sample ID: MW-12  
 Collection Date: 8/14/2008 11:00:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Styrene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
tert-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/19/2008 11:26:42 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
trans-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/19/2008 11:26:42 AM
Vinyl chloride	ND	1.0		µg/L	1	8/19/2008 11:26:42 AM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2008 11:26:42 AM
Surr: 1,2-Dichloroethane-d4	93.9	68.1-123		%REC	1	8/19/2008 11:26:42 AM
Surr: 4-Bromofluorobenzene	99.6	53.2-145		%REC	1	8/19/2008 11:26:42 AM
Surr: Dibromofluoromethane	95.5	68.5-119		%REC	1	8/19/2008 11:26:42 AM
Surr: Toluene-d8	105	64-131		%REC	1	8/19/2008 11:26:42 AM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	280	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	280	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	270	1.0		mg CO2/L	1	8/22/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

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**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-03

**Client Sample ID:** MW-37  
**Collection Date:** 8/14/2008 11:20:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.79	0.10		mg/L	1	8/15/2008 8:51:09 PM
Chloride	230	1.0		mg/L	10	8/15/2008 9:08:33 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 8:51:09 PM
Bromide	2.9	0.10		mg/L	1	8/15/2008 8:51:09 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 8:51:09 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 8:51:09 PM
Sulfate	34	0.50		mg/L	1	8/15/2008 8:51:09 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-03

Client Sample ID: MW-37  
 Collection Date: 8/14/2008 11:20:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	1.5	1.0		mg/L	1	8/18/2008 6:20:25 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 6:20:25 PM
Surr: DNOP	126	58-140		%REC	1	8/18/2008 6:20:25 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	0.11	0.050		mg/L	1	8/26/2008 3:20:55 AM
Surr: BFB	82.9	79.2-121		%REC	1	8/26/2008 3:20:55 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.79	0.10		mg/L	1	8/15/2008 8:51:09 PM
Chloride	230	1.0		mg/L	10	8/15/2008 9:08:33 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 8:51:09 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 8:51:09 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 8:51:09 PM
Sulfate	34	0.50		mg/L	1	8/15/2008 8:51:09 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:42:11 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 4:06:44 PM
Barium	0.43	0.020		mg/L	1	8/29/2008 4:06:44 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 4:06:44 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 4:06:44 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 4:06:44 PM
Iron	0.95	0.020		mg/L	1	8/29/2008 4:06:44 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 4:06:44 PM
Manganese	1.2	0.010		mg/L	5	8/29/2008 5:00:58 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:30:01 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 4:06:44 PM
Zinc	0.15	0.050		mg/L	1	8/29/2008 4:06:44 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:47:22 PM
Barium	0.92	0.020		mg/L	1	8/28/2008 12:47:22 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:47:22 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:47:22 PM
Lead	0.0061	0.0050		mg/L	1	8/28/2008 12:47:22 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:47:22 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:47:22 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-03

Client Sample ID: MW-37  
 Collection Date: 8/14/2008 11:20:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## EPA METHOD 8270C: SEMIVOLATILES

Analyst: JDC

Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

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# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-03

**Client Sample ID:** MW-37  
**Collection Date:** 8/14/2008 11:20:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## EPA METHOD 8270C: SEMIVOLATILES

Analyst: JDC

Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	ND	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	87.4	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	87.6	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	60.3	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	68.8	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	85.3	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	54.0	10.7-80.3		%REC	1	8/23/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Toluene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Ethylbenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-03

**Client Sample ID:** MW-37  
**Collection Date:** 8/14/2008 11:20:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Naphthalene	ND	2.0		µg/L	1	8/19/2008 7:40:48 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2008 7:40:48 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2008 7:40:48 PM
Acetone	ND	10		µg/L	1	8/19/2008 7:40:48 PM
Bromobenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Bromoform	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Bromomethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
2-Butanone	ND	10		µg/L	1	8/19/2008 7:40:48 PM
Carbon disulfide	ND	10		µg/L	1	8/19/2008 7:40:48 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Chlorobenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Chloroethane	ND	2.0		µg/L	1	8/19/2008 7:40:48 PM
Chloroform	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Chloromethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/19/2008 7:40:48 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Dibromomethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/19/2008 7:40:48 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
2-Hexanone	ND	10		µg/L	1	8/19/2008 7:40:48 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/19/2008 7:40:48 PM
Methylene Chloride	ND	3.0		µg/L	1	8/19/2008 7:40:48 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-03

Client Sample ID: MW-37  
 Collection Date: 8/14/2008 11:20:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Styrene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/19/2008 7:40:48 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/19/2008 7:40:48 PM
Vinyl chloride	ND	1.0		µg/L	1	8/19/2008 7:40:48 PM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2008 7:40:48 PM
Surr: 1,2-Dichloroethane-d4	99.9	68.1-123		%REC	1	8/19/2008 7:40:48 PM
Surr: 4-Bromofluorobenzene	103	53.2-145		%REC	1	8/19/2008 7:40:48 PM
Surr: Dibromofluoromethane	99.3	68.5-119		%REC	1	8/19/2008 7:40:48 PM
Surr: Toluene-d8	100	64-131		%REC	1	8/19/2008 7:40:48 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	820	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	820	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	760	1.0		mg CO2/L	1	8/22/2008

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-04

**Client Sample ID:** MW-38  
**Collection Date:** 8/14/2008 11:50:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.78	0.10		mg/L	1	8/15/2008 9:25:58 PM
Chloride	60	1.0		mg/L	10	8/15/2008 9:43:22 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 9:25:58 PM
Bromide	0.67	0.10		mg/L	1	8/15/2008 9:25:58 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 9:25:58 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 9:25:58 PM
Sulfate	150	5.0		mg/L	10	8/15/2008 9:43:22 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-04

**Client Sample ID:** MW-38  
**Collection Date:** 8/14/2008 11:50:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/18/2008 6:54:30 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 6:54:30 PM
Surr: DNOP	132	58-140		%REC	1	8/18/2008 6:54:30 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/26/2008 3:51:20 AM
Surr: BFB	85.4	79.2-121		%REC	1	8/26/2008 3:51:20 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.78	0.10		mg/L	1	8/15/2008 9:25:58 PM
Chloride	60	1.0		mg/L	10	8/15/2008 9:43:22 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 9:25:58 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 9:25:58 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 9:25:58 PM
Sulfate	150	5.0		mg/L	10	8/15/2008 9:43:22 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:47:38 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 4:09:23 PM
Barium	0.17	0.020		mg/L	1	8/29/2008 4:09:23 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 4:09:23 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 4:09:23 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 4:09:23 PM
Iron	2.2	0.10		mg/L	5	8/29/2008 5:03:46 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 4:09:23 PM
Manganese	2.6	0.010		mg/L	5	8/29/2008 5:03:46 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:32:32 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 4:09:23 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 4:09:23 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:49:52 PM
Barium	0.18	0.020		mg/L	1	8/28/2008 12:49:52 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:49:52 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:49:52 PM
Lead	0.011	0.0050		mg/L	1	8/28/2008 12:49:52 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:49:52 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:49:52 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-04

Client Sample ID: MW-38  
 Collection Date: 8/14/2008 11:50:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

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## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-04

Client Sample ID: MW-38  
 Collection Date: 8/14/2008 11:50:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	ND	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	80.6	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	81.9	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	40.6	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	71.6	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	76.8	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	29.7	10.7-80.3		%REC	1	8/23/2008

**EPA METHOD 8260B: VOLATILES**

Analyst: HL

Benzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Toluene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Ethylbenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Methyl tert-butyl ether (MTBE)	2.2	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-04

**Client Sample ID:** MW-38  
**Collection Date:** 8/14/2008 11:50:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Naphthalene	ND	2.0		µg/L	1	8/19/2008 8:09:25 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2008 8:09:25 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2008 8:09:25 PM
Acetone	ND	10		µg/L	1	8/19/2008 8:09:25 PM
Bromobenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Bromoform	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Bromomethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
2-Butanone	ND	10		µg/L	1	8/19/2008 8:09:25 PM
Carbon disulfide	ND	10		µg/L	1	8/19/2008 8:09:25 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Chlorobenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Chloroethane	ND	2.0		µg/L	1	8/19/2008 8:09:25 PM
Chloroform	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Chloromethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/19/2008 8:09:25 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Dibromomethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/19/2008 8:09:25 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
2-Hexanone	ND	10		µg/L	1	8/19/2008 8:09:25 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/19/2008 8:09:25 PM
Methylene Chloride	ND	3.0		µg/L	1	8/19/2008 8:09:25 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-04

**Client Sample ID:** MW-38  
**Collection Date:** 8/14/2008 11:50:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Styrene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/19/2008 8:09:25 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/19/2008 8:09:25 PM
Vinyl chloride	ND	1.0		µg/L	1	8/19/2008 8:09:25 PM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2008 8:09:25 PM
Surr: 1,2-Dichloroethane-d4	95.4	68.1-123		%REC	1	8/19/2008 8:09:25 PM
Surr: 4-Bromofluorobenzene	97.4	53.2-145		%REC	1	8/19/2008 8:09:25 PM
Surr: Dibromofluoromethane	98.9	68.5-119		%REC	1	8/19/2008 8:09:25 PM
Surr: Toluene-d8	98.7	64-131		%REC	1	8/19/2008 8:09:25 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	600	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	600	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	570	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-05

**Client Sample ID:** MW-11 FD  
**Collection Date:** 8/14/2008 10:15:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.48	0.10		mg/L	1	8/15/2008 10:00:46 PM
Chloride	110	1.0		mg/L	10	8/15/2008 10:18:11 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 10:00:46 PM
Bromide	1.4	0.10		mg/L	1	8/15/2008 10:00:46 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 10:00:46 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 10:00:46 PM
Sulfate	1.6	0.50		mg/L	1	8/15/2008 10:00:46 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-05

Client Sample ID: MW-11 FD  
 Collection Date: 8/14/2008 10:15:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	9.4	1.0		mg/L	1	8/18/2008 7:28:34 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 7:28:34 PM
Surr: DNOP	127	58-140		%REC	1	8/18/2008 7:28:34 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	3.5	0.10		mg/L	2	8/26/2008 11:44:07 PM
Surr: BFB	418	79.2-121	S	%REC	2	8/26/2008 11:44:07 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.48	0.10		mg/L	1	8/15/2008 10:00:46 PM
Chloride	110	1.0		mg/L	10	8/15/2008 10:18:11 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 10:00:46 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 10:00:46 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 10:00:46 PM
Sulfate	1.6	0.50		mg/L	1	8/15/2008 10:00:46 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:49:24 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 4:12:01 PM
Barium	0.65	0.020		mg/L	1	8/29/2008 4:12:01 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 4:12:01 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 4:12:01 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 4:12:01 PM
Iron	10	1.0		mg/L	50	8/29/2008 5:17:42 PM
Lead	0.0051	0.0050		mg/L	1	8/29/2008 4:12:01 PM
Manganese	1.9	0.010		mg/L	5	8/29/2008 5:15:17 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:35:03 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 4:12:01 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 4:12:01 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:52:19 PM
Barium	0.66	0.020		mg/L	1	8/28/2008 12:52:19 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:52:19 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:52:19 PM
Lead	0.016	0.0050		mg/L	1	8/28/2008 12:52:19 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:52:19 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:52:19 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808258  
Project: Down-Gradient Wells Annual Aug 2008  
Lab ID: 0808258-05

Client Sample ID: MW-11 FD  
Collection Date: 8/14/2008 10:15:00 AM  
Date Received: 8/15/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-05

Client Sample ID: MW-11 FD  
 Collection Date: 8/14/2008 10:15:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	31	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	86.1	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	78.4	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	50.3	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	64.7	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	75.4	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	45.0	10.7-80.3		%REC	1	8/23/2008
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	4.7	1.0		µg/L	1	8/19/2008 1:24:04 PM
Toluene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Ethylbenzene	2.2	1.0		µg/L	1	8/19/2008 1:24:04 PM
Methyl tert-butyl ether (MTBE)	18	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,2,4-Trimethylbenzene	780	10		µg/L	10	8/19/2008 8:39:23 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-05

**Client Sample ID:** MW-11 FD  
**Collection Date:** 8/14/2008 10:15:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Naphthalene	98	2.0		µg/L	1	8/19/2008 1:24:04 PM
1-Methylnaphthalene	17	4.0		µg/L	1	8/19/2008 1:24:04 PM
2-Methylnaphthalene	27	4.0		µg/L	1	8/19/2008 1:24:04 PM
Acetone	ND	10		µg/L	1	8/19/2008 1:24:04 PM
Bromobenzene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Bromoform	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Bromomethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
2-Butanone	ND	10		µg/L	1	8/19/2008 1:24:04 PM
Carbon disulfide	ND	10		µg/L	1	8/19/2008 1:24:04 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Chlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Chloroethane	ND	2.0		µg/L	1	8/19/2008 1:24:04 PM
Chloroform	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Chloromethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/19/2008 1:24:04 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Dibromomethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/19/2008 1:24:04 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
2-Hexanone	ND	10		µg/L	1	8/19/2008 1:24:04 PM
Isopropylbenzene	57	1.0		µg/L	1	8/19/2008 1:24:04 PM
4-Isopropyltoluene	5.0	1.0		µg/L	1	8/19/2008 1:24:04 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/19/2008 1:24:04 PM
Methylene Chloride	ND	3.0		µg/L	1	8/19/2008 1:24:04 PM
n-Butylbenzene	2.8	1.0		µg/L	1	8/19/2008 1:24:04 PM
n-Propylbenzene	59	1.0		µg/L	1	8/19/2008 1:24:04 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-05

**Client Sample ID:** MW-11 FD  
**Collection Date:** 8/14/2008 10:15:00 AM  
**Date Received:** 8/15/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	12	1.0		µg/L	1	8/19/2008 1:24:04 PM
Styrene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
tert-Butylbenzene	2.5	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/19/2008 1:24:04 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/19/2008 1:24:04 PM
Vinyl chloride	ND	1.0		µg/L	1	8/19/2008 1:24:04 PM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2008 1:24:04 PM
Surr: 1,2-Dichloroethane-d4	108	68.1-123		%REC	1	8/19/2008 1:24:04 PM
Surr: 4-Bromofluorobenzene	125	53.2-145		%REC	1	8/19/2008 1:24:04 PM
Surr: Dibromofluoromethane	95.7	68.5-119		%REC	1	8/19/2008 1:24:04 PM
Surr: Toluene-d8	101	64-131		%REC	1	8/19/2008 1:24:04 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1100	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	1100	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1200	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-06

Client Sample ID: Field Blank  
 Collection Date: 8/14/2008 11:45:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Toluene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Ethylbenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Naphthalene	ND	2.0		µg/L	1	8/19/2008 1:52:45 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2008 1:52:45 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2008 1:52:45 PM
Acetone	ND	10		µg/L	1	8/19/2008 1:52:45 PM
Bromobenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Bromodichloromethane	1.3	1.0		µg/L	1	8/19/2008 1:52:45 PM
Bromoform	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Bromomethane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
2-Butanone	ND	10		µg/L	1	8/19/2008 1:52:45 PM
Carbon disulfide	ND	10		µg/L	1	8/19/2008 1:52:45 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Chlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Chloroethane	ND	2.0		µg/L	1	8/19/2008 1:52:45 PM
Chloroform	13	1.0		µg/L	1	8/19/2008 1:52:45 PM
Chloromethane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/19/2008 1:52:45 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Dibromomethane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/19/2008 1:52:45 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
2-Hexanone	ND	10		µg/L	1	8/19/2008 1:52:45 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-06

Client Sample ID: Field Blank  
 Collection Date: 8/14/2008 11:45:00 AM  
 Date Received: 8/15/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: HL
Isopropylbenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/19/2008 1:52:45 PM
Methylene Chloride	ND	3.0		µg/L	1	8/19/2008 1:52:45 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
sec-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Styrene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/19/2008 1:52:45 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/19/2008 1:52:45 PM
Vinyl chloride	ND	1.0		µg/L	1	8/19/2008 1:52:45 PM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2008 1:52:45 PM
Surr: 1,2-Dichloroethane-d4	94.3	68.1-123		%REC	1	8/19/2008 1:52:45 PM
Surr: 4-Bromofluorobenzene	97.0	53.2-145		%REC	1	8/19/2008 1:52:45 PM
Surr: Dibromofluoromethane	92.8	68.5-119		%REC	1	8/19/2008 1:52:45 PM
Surr: Toluene-d8	96.7	64-131		%REC	1	8/19/2008 1:52:45 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit



## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808258  
 Project: Down-Gradient Wells Annual Aug 2008  
 Lab ID: 0808258-07

Client Sample ID: Trip Blank  
 Collection Date:  
 Date Received: 8/15/2008  
 Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/26/2008 4:54:50 AM
Surr: BFB	87.0	79.2-121		%REC	1	8/26/2008 4:54:50 AM
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Toluene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Ethylbenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Naphthalene	ND	2.0		µg/L	1	8/19/2008 2:21:33 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2008 2:21:33 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/19/2008 2:21:33 PM
Acetone	ND	10		µg/L	1	8/19/2008 2:21:33 PM
Bromobenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Bromoform	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Bromomethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
2-Butanone	ND	10		µg/L	1	8/19/2008 2:21:33 PM
Carbon disulfide	ND	10		µg/L	1	8/19/2008 2:21:33 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Chlorobenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Chloroethane	ND	2.0		µg/L	1	8/19/2008 2:21:33 PM
Chloroform	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Chloromethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/19/2008 2:21:33 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Dibromomethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808258  
**Project:** Down-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808258-07

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Date Received:** 8/15/2008  
**Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
2,2-Dichloropropane	ND	2.0		µg/L	1	8/19/2008 2:21:33 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
2-Hexanone	ND	10		µg/L	1	8/19/2008 2:21:33 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/19/2008 2:21:33 PM
Methylene Chloride	ND	3.0		µg/L	1	8/19/2008 2:21:33 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
sec-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Styrene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/19/2008 2:21:33 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/19/2008 2:21:33 PM
Vinyl chloride	ND	1.0		µg/L	1	8/19/2008 2:21:33 PM
Xylenes, Total	ND	1.5		µg/L	1	8/19/2008 2:21:33 PM
Surr: 1,2-Dichloroethane-d4	96.1	68.1-123		%REC	1	8/19/2008 2:21:33 PM
Surr: 4-Bromofluorobenzene	98.6	53.2-145		%REC	1	8/19/2008 2:21:33 PM
Surr: Dibromofluoromethane	92.1	68.5-119		%REC	1	8/19/2008 2:21:33 PM
Surr: Toluene-d8	93.3	64-131		%REC	1	8/19/2008 2:21:33 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**CASE NARRATIVE**

September 5, 2008

Lab Name: Anatek Labs, Inc. 1282 Alturas Drive, Moscow, ID 83843, [www.anateklabs.com](http://www.anateklabs.com) FL NELAP E87893, NV ID13-2004-31, WA DOE C126, OR ELAP ID200001, MT 0028, ID, CO, NM

**Project Tracking No.:** 0808258**Anatek Batch:** 080819021

**Project Summary:** Five (5) water samples were received on 8/19/2008 for metals (EPA 6020A) analysis. All samples were received in good condition and with the appropriate chain of custody. Samples were received at 3.5C.

<u>Client Sample ID</u>	<u>Anatek Sample ID</u>	<u>Method/Prep Method</u>
0808258-01F / MW-11	080819021-001	EPA 6020A/3005A
0808258-02F / MW-12	080819021-002	EPA 6020A/3005A
0808258-03F / MW-37	080819021-003	EPA 6020A/3005A
0808258-04F / MW-38	080819021-004	EPA 6020A/3005A
0808258-05F / MW-11 FD	080819021-005	EPA 6020A/3005A

**QA/QC Checks**

<u>Parameters</u>	<u>Yes / No</u>	<u>Exceptions / Deviations</u>
Sample Holding Time Valid?	Y	NA
Surrogate Recoveries Valid?	Y	NA
QC Sample(s) Recoveries Valid?	Y	NA
Method Blank(s) Valid?	Y	NA
Tune(s) Valid?	Y	NA
Internal Standard Responses Valid?	Y	NA
Initial Calibration Curve(s) Valid?	Y	NA
Continuing Calibration(s) Valid?	Y	NA
Comments:	Y	NA

**1. Holding Time Requirements**

No problems encountered.

**2. GC/MS Tune Requirements**

NA

**3. Calibration Requirements**

No problems encountered.

**4. Surrogate Recovery Requirements**

NA

**5. QC Sample (LCS/MS/MSD) Recovery Requirements**

No problems encountered.

**6. Method Blank Requirements**

The method blanks were non-detect (<MDL) for all analytes. No problems encountered.

**7. Internal Standard(s) Response Requirements**

No problems encountered.

**8. Comments**

No problems encountered.

**I certify that this data package is in compliance with the terms and conditions of the contract. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee.**

Approved by: \_\_\_\_\_

*John W. Cuth*

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

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

**Batch #:** 080819021  
**Project Name:** 0808258

## Analytical Results Report

<b>Sample Number</b>	080819021-001	<b>Sampling Date</b>	8/14/2008	<b>Date/Time Received</b>	8/19/2008 11:15 AM
<b>Client Sample ID</b>	0808258-01F / MW-11	<b>Sampling Time</b>	10:00 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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# Anatek Labs, Inc.

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

**Batch #:** 080819021  
**Project Name:** 0808258

## Analytical Results Report

<b>Sample Number</b>	080819021-002	<b>Sampling Date</b>	8/14/2008	<b>Date/Time Received</b>	8/19/2008 11:15 AM
<b>Client Sample ID</b>	0808258-02F / MW-12	<b>Sampling Time</b>	11:00 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.00334	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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# Anatek Labs, Inc.

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

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

**Batch #:** 080819021  
**Project Name:** 0808258

## Analytical Results Report

<b>Sample Number</b>	080819021-003	<b>Sampling Date</b>	8/14/2008	<b>Date/Time Received</b>	8/19/2008 11:15 AM
<b>Client Sample ID</b>	0808258-03F / MW-37	<b>Sampling Time</b>	11:20 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.00108	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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# Anatek Labs, Inc.

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

**Batch #:** 080819021  
**Project Name:** 0808258

## Analytical Results Report

<b>Sample Number</b>	080819021-004	<b>Sampling Date</b>	8/14/2008	<b>Date/Time Received</b>	8/19/2008 11:15 AM
<b>Client Sample ID</b>	0808258-04F / MW-38	<b>Sampling Time</b>	11:50 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.00242	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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# Anatek Labs, Inc.

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

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

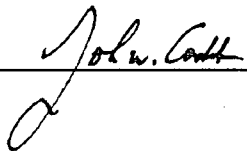
**Batch #:** 080819021  
**Project Name:** 0808258

## Analytical Results Report

<b>Sample Number</b>	080819021-005	<b>Sampling Date</b>	8/14/2008	<b>Date/Time Received</b>	8/19/2008 11:15 AM
<b>Client Sample ID</b>	0808258-05F / MW-11 FD	<b>Sampling Time</b>	10:15 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

Authorized Signature



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

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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Printed on: 5 September 2008 13:44:30

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

**Batch #:** 080819021  
**Project Name:** 0808258

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dissolved Uranium	0.0503	mg/L	0.05	100.6	85-115	8/27/2008	8/27/2008

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
080820024-002	Dissolved Uranium	0.00165	0.0552	mg/L	0.05	107.1	75-125	8/27/2008	8/27/2008

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dissolved Uranium	0.0578	mg/L	0.05	112.3	4.6	0-20	8/27/2008	8/27/2008

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	8/27/2008

AR Acceptable Range  
ND Not Detected  
PQL Practical Quantitation Limit  
RPD Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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Printed on: 5 September 2008 13:44:30

Lab Order: 0808258

Client: Western Refining Southwest, Inc.

Project: Down-Gradient Wells Annual Aug

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808258-01A	MW-11	8/14/2008 10:00:00 AM	Aqueous	EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29845		8/19/2008
				EPA Method 8260B: VOLATILES	R29845		8/19/2008
0808258-01B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
0808258-01C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R30109		9/5/2008
				EPA Method 300.0: Anions	R29808		8/15/2008
				EPA Method 300.0: Anions	R29808		8/15/2008
				SM 2320B: Alkalinity	R29883		8/22/2008
0808258-01D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808258-01E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
0808258-02A	MW-12	8/14/2008 11:00:00 AM		EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29845		8/19/2008
0808258-02B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
0808258-02C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R29808		8/15/2008
				EPA Method 300.0: Anions	R29808		8/15/2008
				SM 2320B: Alkalinity	R29883		8/22/2008

## DATES REPORT

Lab Order: 0808258

Client: Western Refining Southwest, Inc.

Project: Down-Gradient Wells Annual Aug

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808258-02D	MW-12	8/14/2008 11:00:00 AM	Aqueous	EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
0808258-02E				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808258-03A	MW-37	8/14/2008 11:20:00 AM		EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
				EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29845		8/19/2008
				EPA Method 8260B: VOLATILES	R29845		8/19/2008
0808258-03B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
0808258-03C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R29808		8/15/2008
				EPA Method 300.0: Anions	R29808		8/15/2008
				SM 2320B: Alkalinity	R29883		8/22/2008
0808258-03D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808258-03E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
0808258-04A	MW-38	8/14/2008 11:50:00 AM		EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29845		8/19/2008
				EPA Method 8260B: VOLATILES	R29845		8/19/2008
0808258-04B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
0808258-04C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R29808		8/15/2008

# Hall Environmental Analysis Laboratory, Inc.

23-Sep-08

Lab Order: 0808258

Client: Western Refining Southwest, Inc.

Project: Down-Gradient Wells Annual Aug

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808258-04C	MW-38	8/14/2008 11:50:00 AM	Aqueous	EPA Method 300.0: Anions	R29808		8/15/2008
0808258-04D				SM 2320B: Alkalinity	R29883		8/22/2008
				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808258-04E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
0808258-05A	MW-11 FD	8/14/2008 10:15:00 AM		EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29845		8/19/2008
				EPA Method 8260B: VOLATILES	R29845		8/19/2008
0808258-05B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
0808258-05C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R29808		8/15/2008
				EPA Method 300.0: Anions	R29808		8/15/2008
				SM 2320B: Alkalinity	R29883		8/22/2008
0808258-05D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808258-05E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
0808258-06A	Field Blank	8/14/2008 11:45:00 AM		EPA Method 8260B: VOLATILES	R29845		8/19/2008
0808258-07A	Trip Blank		Trip Blank	EPA Method 8015B: Gasoline Range	R29921		8/26/2008

Lab Order: 0808258

Client: Western Refining Southwest, Inc.

Project: Down-Gradient Wells Annual Aug

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808258-07A	Trip Blank		Trip Blank	EPA Method 8260B: VOLATILES	R29845		8/19/2008

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 300.0: Anions

Sample ID: 0808258-01CMSD

MSD

Batch ID: R29808

Analysis Date: 8/15/2008 7:24:07 PM

Fluoride	0.9780	mg/L	0.10	81.8	65.1	121	0.0500	20	
Nitrogen, Nitrite (As N)	0.8941	mg/L	0.10	89.4	52.9	128	2.49	20	
Nitrogen, Nitrate (As N)	2.454	mg/L	0.10	96.3	83.8	112	0.820	20	
Phosphorus, Orthophosphate (As P)	4.257	mg/L	0.50	85.1	77.6	118	1.44	20	
Sulfate	11.34	mg/L	0.50	103	59.4	126	1.42	20	

Sample ID: MB

MBLK

Batch ID: R29808

Analysis Date: 8/15/2008 10:24:20 AM

Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						

Sample ID: MB

MBLK

Batch ID: R30109

Analysis Date: 9/5/2008 9:46:34 AM

Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						

Sample ID: LCS

LCS

Batch ID: R29808

Analysis Date: 8/15/2008 10:41:45 AM

Fluoride	0.5309	mg/L	0.10	106	90	110			
Chloride	4.942	mg/L	0.10	98.8	90	110			
Nitrogen, Nitrite (As N)	1.004	mg/L	0.10	100	90	110			
Nitrogen, Nitrate (As N)	2.515	mg/L	0.10	101	90	110			
Phosphorus, Orthophosphate (As P)	5.112	mg/L	0.50	102	90	110			
Sulfate	10.23	mg/L	0.50	102	90	110			

Sample ID: LCS

LCS

Batch ID: R30109

Analysis Date: 9/5/2008 10:03:58 AM

Fluoride	0.5064	mg/L	0.10	101	90	110			
Chloride	4.904	mg/L	0.10	98.1	90	110			
Nitrogen, Nitrite (As N)	0.9284	mg/L	0.10	92.8	90	110			
Nitrogen, Nitrate (As N)	2.522	mg/L	0.10	101	90	110			
Phosphorus, Orthophosphate (As P)	4.983	mg/L	0.50	99.7	90	110			
Sulfate	10.05	mg/L	0.50	101	90	110			

Sample ID: 0808258-01CMS

MS

Batch ID: R29808

Analysis Date: 8/15/2008 7:06:43 PM

Fluoride	0.9775	mg/L	0.10	81.7	65.1	121			
Nitrogen, Nitrite (As N)	0.8721	mg/L	0.10	87.2	52.9	128			
Nitrogen, Nitrate (As N)	2.434	mg/L	0.10	95.5	83.8	112			
Phosphorus, Orthophosphate (As P)	4.196	mg/L	0.50	83.9	77.6	118			
Sulfate	11.18	mg/L	0.50	101	59.4	126			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

**Client:** Western Refining Southwest, Inc.  
**Project:** Down-Gradient Wells Annual Aug 2008

**Work Order:** 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: SM 2320B: Alkalinity</b>									
<b>Sample ID: MB</b>		MBLK							
					Batch ID: R29883		Analysis Date:		8/22/2008
Alkalinity, Total (As CaCO <sub>3</sub> )	ND	mg/L CaC	2.0						
Carbonate	ND	mg/L CaC	2.0						
Bicarbonate	ND	mg/L CaC	2.0						
<b>Sample ID: LCS</b>		LCS							
					Batch ID: R29883		Analysis Date:		8/22/2008
Alkalinity, Total (As CaCO <sub>3</sub> )	81.00	mg/L CaC	20	100	80	120			
<b>Method: EPA Method 8015B: Diesel Range</b>									
<b>Sample ID: MB-16802</b>		MBLK							
					Batch ID: 16802		Analysis Date:		8/18/2008 9:18:03 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
<b>Sample ID: LCS-16802</b>		LCS							
					Batch ID: 16802		Analysis Date:		8/18/2008 9:51:32 AM
Diesel Range Organics (DRO)	4.911	mg/L	1.0	98.2	74	157			
<b>Sample ID: LCSD-16802</b>		LCSD							
					Batch ID: 16802		Analysis Date:		8/18/2008 10:25:06 AM
Diesel Range Organics (DRO)	4.761	mg/L	1.0	95.2	74	157	3.10	23	
<b>Method: EPA Method 8015B: Gasoline Range</b>									
<b>Sample ID: 5ML RB</b>		MBLK							
					Batch ID: R29921		Analysis Date:		8/25/2008 9:06:48 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
<b>Sample ID: 5ML RB</b>		MBLK							
					Batch ID: R29921		Analysis Date:		8/25/2008 9:06:48 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
<b>Sample ID: 5ML RB</b>		MBLK							
					Batch ID: R29921		Analysis Date:		8/26/2008 2:59:23 PM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
<b>Sample ID: LCS-GRO</b>		LCS							
					Batch ID: R29921		Analysis Date:		8/25/2008 5:25:30 PM
Gasoline Range Organics (GRO)	0.5666	mg/L	0.050	113	80	115			
<b>Sample ID: LCS-GRO</b>		LCS							
					Batch ID: R29921		Analysis Date:		8/25/2008 5:25:30 PM
Gasoline Range Organics (GRO)	0.5666	mg/L	0.050	113	80	115			
<b>Sample ID: LCS-GRO</b>		LCS							
					Batch ID: R29921		Analysis Date:		8/26/2008 4:30:47 PM
Gasoline Range Organics (GRO)	0.4266	mg/L	0.050	85.3	80	115			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29845 Analysis Date: 8/19/2008 9:01:51 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

**Client:** Western Refining Southwest, Inc.  
**Project:** Down-Gradient Wells Annual Aug 2008

**Work Order:** 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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**Method:** EPA Method 8260B: VOLATILES

**Sample ID:** 5ml rb

MBLK

Batch ID: R29845 Analysis Date: 8/19/2008 9:01:51 AM

4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Arenes, Total	ND	µg/L	1.5

**Sample ID:** b7

MBLK

Batch ID: R29845 Analysis Date: 8/19/2008 9:08:01 PM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0

**Qualifiers:**

V	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

**Client:** Western Refining Southwest, Inc.  
**Project:** Down-Gradient Wells Annual Aug 2008

**Work Order:** 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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**Method:** EPA Method 8260B: VOLATILES

**Sample ID:** b7 **MBLK** **Batch ID:** R29845 **Analysis Date:** 8/19/2008 9:08:01 PM

Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5

**Sample ID:** 100ng lcs

**LCS**

**Batch ID:** R29845 **Analysis Date:** 8/19/2008 9:59:13 AM

**Qualifiers:**

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 100ng lcs LCS Batch ID: R29845 Analysis Date: 8/19/2008 9:59:13 AM

Benzene	20.63	µg/L	1.0	103	86.8	120			
Toluene	19.97	µg/L	1.0	99.8	64.1	127			
Chlorobenzene	22.25	µg/L	1.0	111	82.4	113			
1,1-Dichloroethene	23.25	µg/L	1.0	116	86.5	132			
Trichloroethene (TCE)	19.43	µg/L	1.0	97.2	77.3	123			

Sample ID: 100ng lcs\_b LCS Batch ID: R29845 Analysis Date: 8/19/2008 10:05:19 PM

Benzene	21.26	µg/L	1.0	106	86.8	120			
Toluene	20.33	µg/L	1.0	102	64.1	127			
Chlorobenzene	22.77	µg/L	1.0	114	82.4	113			S
1,1-Dichloroethene	23.89	µg/L	1.0	119	86.5	132			
Trichloroethene (TCE)	19.98	µg/L	1.0	99.9	77.3	123			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16804

MBLK

Batch ID: 16804 Analysis Date: 8/21/2008

Acenaphthene	ND	µg/L	10
Acenaphthylene	ND	µg/L	10
Aniline	ND	µg/L	10
Anthracene	ND	µg/L	10
Azobenzene	ND	µg/L	10
Benz(a)anthracene	ND	µg/L	10
Benzo(a)pyrene	ND	µg/L	10
Benzo(b)fluoranthene	ND	µg/L	10
Benzo(g,h,i)perylene	ND	µg/L	10
Benzo(k)fluoranthene	ND	µg/L	10
Benzoic acid	ND	µg/L	20
Benzyl alcohol	ND	µg/L	10
Bis(2-chloroethoxy)methane	ND	µg/L	10
Bis(2-chloroethyl)ether	ND	µg/L	10
Bis(2-chloroisopropyl)ether	ND	µg/L	10
Bis(2-ethylhexyl)phthalate	ND	µg/L	10
4-Bromophenyl phenyl ether	ND	µg/L	10
Butyl benzyl phthalate	ND	µg/L	10
Carbazole	ND	µg/L	10
4-Chloro-3-methylphenol	ND	µg/L	10
4-Chloroaniline	ND	µg/L	10
2-Chloronaphthalene	ND	µg/L	10
2-Chlorophenol	ND	µg/L	10
4-Chlorophenyl phenyl ether	ND	µg/L	10
Chrysene	ND	µg/L	10
Di-n-butyl phthalate	ND	µg/L	10
Di-n-octyl phthalate	ND	µg/L	10
Dibenz(a,h)anthracene	ND	µg/L	10
Dibenzofuran	ND	µg/L	10
1,2-Dichlorobenzene	ND	µg/L	10
1,3-Dichlorobenzene	ND	µg/L	10
1,4-Dichlorobenzene	ND	µg/L	10
3,3'-Dichlorobenzidine	ND	µg/L	10
Diethyl phthalate	ND	µg/L	10
Dimethyl phthalate	ND	µg/L	10
2,4-Dichlorophenol	ND	µg/L	20
2,4-Dimethylphenol	ND	µg/L	10
4,6-Dinitro-2-methylphenol	ND	µg/L	20
2,4-Dinitrophenol	ND	µg/L	20
2,4-Dinitrotoluene	ND	µg/L	10
2,6-Dinitrotoluene	ND	µg/L	10
Fluoranthene	ND	µg/L	10
Fluorene	ND	µg/L	10
Hexachlorobenzene	ND	µg/L	10

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 8270C: Semivolatiles</b>									
<b>Sample ID: mb-16804</b>		<b>MBLK</b>		<b>Batch ID: 16804</b>		<b>Analysis Date: 8/21/2008</b>			
Hexachlorobutadiene	ND	µg/L	10						
Hexachlorocyclopentadiene	ND	µg/L	10						
Hexachloroethane	ND	µg/L	10						
Indeno(1,2,3-cd)pyrene	ND	µg/L	10						
Isophorone	ND	µg/L	10						
2-Methylnaphthalene	ND	µg/L	10						
2-Methylphenol	ND	µg/L	10						
3+4-Methylphenol	ND	µg/L	10						
N-Nitrosodi-n-propylamine	ND	µg/L	10						
N-Nitrosodimethylamine	ND	µg/L	10						
N-Nitrosodiphenylamine	ND	µg/L	10						
Naphthalene	ND	µg/L	10						
2-Nitroaniline	ND	µg/L	10						
3-Nitroaniline	ND	µg/L	10						
4-Nitroaniline	ND	µg/L	10						
Nitrobenzene	ND	µg/L	10						
2-Nitrophenol	ND	µg/L	10						
4-Nitrophenol	ND	µg/L	10						
Pentachlorophenol	ND	µg/L	40						
Phenanthrene	ND	µg/L	10						
Phenol	ND	µg/L	10						
Pyrene	ND	µg/L	10						
Pyridine	ND	µg/L	10						
1,2,4-Trichlorobenzene	ND	µg/L	10						
2,4,5-Trichlorophenol	ND	µg/L	10						
2,4,6-Trichlorophenol	ND	µg/L	10						
<b>Sample ID: lcs-16804</b>		<b>LCS</b>		<b>Batch ID: 16804</b>		<b>Analysis Date: 8/21/2008</b>			
Acenaphthene	43.66	µg/L	10	43.7	11	123			
4-Chloro-3-methylphenol	102.0	µg/L	10	50.1	15.4	119			
2-Chlorophenol	95.42	µg/L	10	46.7	12.2	122			
1,4-Dichlorobenzene	37.00	µg/L	10	37.0	16.9	100			
2,4-Dinitrotoluene	43.10	µg/L	10	43.1	13	138			
N-Nitrosodi-n-propylamine	50.50	µg/L	10	50.5	9.93	122			
4-Nitrophenol	67.84	µg/L	10	33.9	12.5	87.4			
Pentachlorophenol	91.04	µg/L	40	45.5	3.55	114			
Phenol	70.52	µg/L	10	35.3	7.53	73.1			
Pyrene	52.60	µg/L	10	52.6	12.6	140			
1,2,4-Trichlorobenzene	38.40	µg/L	10	38.4	17.4	98.7			
<b>Sample ID: lcsd-16804</b>		<b>LCSD</b>		<b>Batch ID: 16804</b>		<b>Analysis Date: 8/21/2008</b>			
Acenaphthene	51.78	µg/L	10	51.8	11	123	17.0	30.5	
4-Chloro-3-methylphenol	120.8	µg/L	10	59.5	15.4	119	16.9	28.6	
2-Chlorophenol	112.9	µg/L	10	55.5	12.2	122	16.8	107	
1,4-Dichlorobenzene	42.48	µg/L	10	42.5	16.9	100	13.8	62.1	
2,4-Dinitrotoluene	50.30	µg/L	10	50.3	13	138	15.4	14.7	R

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: lcsd-16804

LCSD

Batch ID: 16804

Analysis Date:

8/21/2008

N-Nitrosodi-n-propylamine	58.30	µg/L	10	58.3	9.93	122	14.3	30.3	
4-Nitrophenol	92.10	µg/L	10	46.0	12.5	87.4	30.3	36.3	
Pentachlorophenol	103.7	µg/L	40	51.9	3.55	114	13.0	49	
Phenol	90.88	µg/L	10	45.4	7.53	73.1	25.2	52.4	
Pyrene	60.08	µg/L	10	60.1	12.6	140	13.3	16.3	
1,2,4-Trichlorobenzene	45.64	µg/L	10	45.6	17.4	98.7	17.2	36.4	

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 6010B: Dissolved Metals</b>									
<b>Sample ID: 0808258-05EMSD</b>	<b>MSD</b>				<b>Batch ID: R29998</b>	<b>Analysis Date: 8/29/2008 4:25:48 PM</b>			
Arsenic	0.5257	mg/L	0.020	105	75	125	1.35	20	
Cadmium	0.5195	mg/L	0.0020	104	75	125	2.54	20	
Chromium	0.5003	mg/L	0.0060	100	75	125	2.08	20	
Copper	0.5440	mg/L	0.0060	109	75	125	2.12	20	
Lead	0.5052	mg/L	0.0050	100	75	125	3.47	20	
Silver	0.4839	mg/L	0.0050	96.8	75	125	1.12	20	
Zinc	0.5460	mg/L	0.050	101	75	125	2.76	20	
<b>Sample ID: 0808258-05EMSD</b>	<b>MSD</b>				<b>Batch ID: R29998</b>	<b>Analysis Date: 8/29/2008 5:23:01 PM</b>			
Barium	3.092	mg/L	0.10	96.6	75	125	0.884	20	
Manganese	4.249	mg/L	0.010	92.4	75	125	0.696	20	
<b>Sample ID: 0808258-05EMSD</b>	<b>MSD</b>				<b>Batch ID: R30124</b>	<b>Analysis Date: 9/8/2008 10:57:12 PM</b>			
Selenium	2.776	mg/L	0.25	111	75	125	0.646	20	
<b>Sample ID: MB</b>	<b>MBLK</b>				<b>Batch ID: R29998</b>	<b>Analysis Date: 8/29/2008 1:18:16 PM</b>			
Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.020						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Copper	ND	mg/L	0.0060						
Iron	ND	mg/L	0.020						
Lead	ND	mg/L	0.0050						
Manganese	ND	mg/L	0.0020						
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						
Zinc	ND	mg/L	0.050						
<b>Sample ID: MB</b>	<b>MBLK</b>				<b>Batch ID: R29998</b>	<b>Analysis Date: 8/29/2008 3:30:02 PM</b>			
Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.020						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Copper	ND	mg/L	0.0060						
Iron	ND	mg/L	0.020						
Lead	ND	mg/L	0.0050						
Manganese	ND	mg/L	0.0020						
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						
<b>Sample ID: MB</b>	<b>MBLK</b>				<b>Batch ID: R30124</b>	<b>Analysis Date: 9/8/2008 9:44:53 PM</b>			
Selenium	ND	mg/L	0.050						
<b>Sample ID: LCS</b>	<b>LCS</b>				<b>Batch ID: R29998</b>	<b>Analysis Date: 8/29/2008 1:21:07 PM</b>			
Arsenic	0.5042	mg/L	0.020	101	80	120			
Barium	0.5032	mg/L	0.020	101	80	120			
Cadmium	0.5164	mg/L	0.0020	103	80	120			
Chromium	0.5062	mg/L	0.0060	101	80	120			
Copper	0.4904	mg/L	0.0060	98.1	80	120			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 6010B: Dissolved Metals</b>									
<b>Sample ID: LCS</b>		LCS			Batch ID: R29998	Analysis Date: 8/29/2008 1:21:07 PM			
Iron	0.5268	mg/L	0.020	105	80	120			
Lead	0.5188	mg/L	0.0050	104	80	120			
Manganese	0.5008	mg/L	0.0020	100	80	120			
Selenium	0.5137	mg/L	0.050	103	80	120			
Silver	0.5081	mg/L	0.0050	102	80	120			
Zinc	0.5096	mg/L	0.050	102	80	120			
<b>Sample ID: LCS</b>		LCS			Batch ID: R29998	Analysis Date: 8/29/2008 3:32:53 PM			
Arsenic	0.5219	mg/L	0.020	104	80	120			
Barium	0.5196	mg/L	0.020	104	80	120			
Cadmium	0.5339	mg/L	0.0020	107	80	120			
Chromium	0.5264	mg/L	0.0060	105	80	120			
Copper	0.5107	mg/L	0.0060	102	80	120			
Iron	0.5102	mg/L	0.020	102	80	120			
Lead	0.5421	mg/L	0.0050	108	80	120			
Manganese	0.5171	mg/L	0.0020	103	80	120			
Selenium	0.5360	mg/L	0.050	107	80	120			
Silver	0.5257	mg/L	0.0050	105	80	120			
<b>Sample ID: LCS</b>		LCS			Batch ID: R30124	Analysis Date: 9/8/2008 9:47:18 PM			
Selenium	0.5051	mg/L	0.050	101	80	120			
<b>Sample ID: 0808258-05EMS</b>		MS			Batch ID: R29998	Analysis Date: 8/29/2008 4:14:41 PM			
Arsenic	0.5329	mg/L	0.020	107	75	125			
Cadmium	0.5328	mg/L	0.0020	107	75	125			
Chromium	0.5108	mg/L	0.0060	102	75	125			
Copper	0.5556	mg/L	0.0060	111	75	125			
Lead	0.5231	mg/L	0.0050	104	75	125			
Silver	0.4894	mg/L	0.0050	97.9	75	125			
Zinc	0.5613	mg/L	0.050	104	75	125			
<b>Sample ID: 0808258-05EMS</b>		MS			Batch ID: R29998	Analysis Date: 8/29/2008 5:20:39 PM			
Barium	3.065	mg/L	0.10	95.5	75	125			
Manganese	4.220	mg/L	0.010	91.2	75	125			
<b>Sample ID: 0808258-05EMS</b>		MS			Batch ID: R30124	Analysis Date: 9/8/2008 10:54:45 PM			
Selenium	2.794	mg/L	0.25	112	75	125			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Down-Gradient Wells Annual Aug 2008

Work Order: 0808258

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA 6010B: Total Recoverable Metals</b>									
<b>Sample ID: MB-16876</b>		<b>MBLK</b>			<b>Batch ID: 16876</b>		<b>Analysis Date: 8/28/2008 11:55:26 AM</b>		
Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.010						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						
<b>Sample ID: MB-16876</b>		<b>MBLK</b>			<b>Batch ID: 16876</b>		<b>Analysis Date: 9/2/2008 10:17:34 AM</b>		
Barium	ND	mg/L	0.010						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Silver	ND	mg/L	0.0050						
<b>Sample ID: MB-16876</b>		<b>MBLK</b>			<b>Batch ID: 16876</b>		<b>Analysis Date: 9/2/2008 12:52:59 PM</b>		
Arsenic	ND	mg/L	0.020						
Selenium	ND	mg/L	0.050						
<b>Sample ID: LCS-16876</b>		<b>LCS</b>			<b>Batch ID: 16876</b>		<b>Analysis Date: 8/28/2008 11:57:19 AM</b>		
Arsenic	0.4914	mg/L	0.020	98.3	80	120			
Barium	0.4796	mg/L	0.010	95.9	80	120			
Cadmium	0.4924	mg/L	0.0020	98.5	80	120			
Chromium	0.4942	mg/L	0.0060	98.8	80	120			
Lead	0.4785	mg/L	0.0050	95.0	80	120			
Selenium	0.4934	mg/L	0.050	98.7	80	120			
Silver	0.4969	mg/L	0.0050	99.4	80	120			
<b>Sample ID: LCS-16876</b>		<b>LCS</b>			<b>Batch ID: 16876</b>		<b>Analysis Date: 9/2/2008 10:19:54 AM</b>		
Barium	0.4752	mg/L	0.010	95.0	80	120			
Cadmium	0.4758	mg/L	0.0020	95.2	80	120			
Chromium	0.4812	mg/L	0.0060	96.2	80	120			
Lead	0.4736	mg/L	0.0050	94.7	80	120			
Silver	0.4784	mg/L	0.0050	95.7	80	120			
<b>Sample ID: LCS-16876</b>		<b>LCS</b>			<b>Batch ID: 16876</b>		<b>Analysis Date: 9/2/2008 12:55:29 PM</b>		
Arsenic	0.4782	mg/L	0.020	95.6	80	120			
Selenium	0.4710	mg/L	0.050	94.2	80	120			

## Qualifiers:

V	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

## Login Report

Customer Name: HALL ENVIRONMENTAL ANALYSIS LAB

Order ID: 080819021

Purchase Order:

Order Date: 8/19/2008

Project ID:

Project Name: 0808258

Comment:

Sample #:	080819021-001	Customer Sample #:	0808258-01F / MW-11	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/14/2008
Quantity:	1	Matrix:	Water	Date Received:	8/19/2008 11:15:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	8/29/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080819021-002	Customer Sample #:	0808258-02F / MW-12	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/14/2008
Quantity:	1	Matrix:	Water	Date Received:	8/19/2008 11:15:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	8/29/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080819021-003	Customer Sample #:	0808258-03F / MW-37	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/14/2008
Quantity:	1	Matrix:	Water	Date Received:	8/19/2008 11:15:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	8/29/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080819021-004	Customer Sample #:	0808258-04F / MW-38	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/14/2008
Quantity:	1	Matrix:	Water	Date Received:	8/19/2008 11:15:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	8/29/2008	<u>Normal (6-10 Days)</u>	

Customer Name: HALL ENVIRONMENTAL ANALYSIS LAB

Order ID: 080819021

Purchase Order:

Order Date: 8/19/2008

Project ID:

Project Name: 0808258

Comment:

Sample #: 080819021-005 Customer Sample #: 0808258-05F / MW-11 FD Site:

Recv'd: ☒

Collector:

Date Collected: 8/14/2008

Quantity: 1

Matrix: Water

Date Received: 8/19/2008 11:15:00 A

Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/29/2008	<u>Normal (6-10 Days)</u>

### SAMPLE CONDITION RECORD

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature inside the cooler?	3.5
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	N/A
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes

Hall Environmental Analysis Laboratory, Inc.  
4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109-4372  
TEL: 5053453975 FAX: 5053454107

080819 021 **FAIL** Last Due 8/29/2008  
CHAIN-OF-CUST 1st SAMPL 8/14/2008 1st RCVD 8/19/2008  
0808258

Subcontractor:  
Anatek Labs, Inc.  
1282 Alturas Dr  
Moscow, ID 83843  
TEL: (208) 883-2839 Project Name: 0808258  
FAX: (208) 882-9246  
Acct #:

15-Aug-08

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0808258-01F	MW-11	Aqueous	8/14/2008 10:00:00 AM	125HDPHNO3	SEE BELOW
0808258-02F	MW-12	Aqueous	8/14/2008 11:00:00 AM	125HDPHNO3	SEE BELOW
0808258-03F	MW-37	Aqueous	8/14/2008 11:20:00 AM	125HDPHNO3	SEE BELOW
0808258-04F	MW-38	Aqueous	8/14/2008 11:50:00 AM	125HDPHNO3	SEE BELOW
0808258-05F	MW-11 FD	Aqueous	8/14/2008 10:15:00 AM	125HDPHNO3	SEE BELOW

MWBS

ANALYTICAL COMMENTS: LEVEL 4 QA/QC FOR DISSOLVED U BY 6020, PLEASE REPORT @ 0.001 mg/L

Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

Relinquished by: [Signature] Date/Time 8/15/08 Receive  
Relinquished by: \_\_\_\_\_ Receive

ANATEK LABS RECEIVING LIST

☒ RECEIVED INTACT  
☒ LABELS & CHAINS AGREE  
☒ NO HEADSPACE  
PRESERVATIVE: H2O3 TEMP: 3.5 °C

NUMBER OF CONTAINERS: 5 SHIPPED VIA FedEx  
DATE & TIME: 8/08 11:15 INSPECTED BY: [Signature]

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/15/2008

Work Order Number 0808258

Received by: TLS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Container/Temp Blank temperature?	4°	<6° C Acceptable If given sufficient time to cool.	

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: Poured off from 0808258-01E, 02E, 03E, 04E, and 05E into 1 125 ml HNO<sub>3</sub> each from diss U analysis. as 8/15

Corrective Action: \_\_\_\_\_

# Chain-of-Custody Record

Client: Western Refining (Blm fld)

Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

QA/QC Package:

☒ Standard ☒ Level 4 (Full Validation)

☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

Date	Time	Sample Request ID
8-14-08	10am	MW-11
/	/	/
/	/	/
/	/	/
8-14-08	11am	MW-12
/	/	/
/	/	/
/	/	/

Date: 8-14-08 Time: 201pm  
 Relinquished by: Cindy Hurtado  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: Downgradient Wells

Project #: Annual Aug. 2008

Project Manager:

Sampler: Cindy / Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4

Container Type and #	Preservative Type	HEAL No.
6-VOA	HCl	0808258
Amber	Amber	-1
250ml	HNO3	-1
500ml	HNO3	-1
250ml	H2SO4	-1
500ml	—	-1
6-VOA	HCl	-2
Amber	Amber	-2
250ml	HNO3	-2
500ml	HNO3	-2
550ml	H2SO4	-2
500ml	—	-2

Received by: [Signature] 8/15/08 9:55  
 Received by: \_\_\_\_\_

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

### Analysis Request

BTX + MTBE + TMBs (8021)	
BTX + MTBE + TPH (Gas only)	
TPH Method 8015B (Gas/Diesel)	X
TPH (Method 418.1)	
EDB (Method 504.1)	
EDC (Method 8260)	
8310 (PNA or PAH)	
Anions (F, Cl, NO3, NO2, PO4, SO4)	
8081 Pesticides / 8082 PCB's	
8260B (VOA)	X
8270 (Semi-VOA)	X
Dissolved Metals - WACC	X
Total Recoverable Metals	X
CO2, Alkalinity	X
Air Bubbles (Y or N)	

Remarks:

# Chain-of-Custody Record

Client: Western Refining (BlmFld)

Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

QA/QC Package:

- ☒ Standard ☒ Level 4 (Full Validation)  
☐ Other  
☐ EDD (Type) \_\_\_\_\_

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
8-14-08	1120A	MW-37	6-VOA	HCl	0808258
/	/		Amber		-3
/	/		250 ml HNO <sub>3</sub>		-3
/	/		500 ml HNO <sub>3</sub>		-3
/	/		250 ml H <sub>2</sub> SO <sub>4</sub>		-3
/	/		500 ml		-3
8-14-08	1150A	MW-38	6-VOA	HCl	-4
/	/		Amber		-4
/	/		250 ml HNO <sub>3</sub>		-4
/	/		500 ml HNO <sub>3</sub>		-4
/	/		250 ml H <sub>2</sub> SO <sub>4</sub>		-4
/	/		500 ml		-4

Date: 8-14-08 Time: 2PM

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Received by: JS

Relinquished by: \_\_\_\_\_

Received by: JS

Remarks:

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Downgradient Wells

Annual August 2008

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: ☐ Yes ☐ No

Sample Temperature: 4

BTEX + MTBE + TMBs (8021)

BTEX + MTBE + TPH (Gas only)

TPH Method 8015B (Gas/Diesel)

TPH (Method 418.1)

EDB (Method 504.1)

EDC (Method 8260)

8310 (PNA or PAH)

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

WACC

Dissolved Metals

TOTAL Recoverable Metals

CO<sub>2</sub>, Alkalinity

Air Bubbles (Y or N)

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

### Analysis Request







## COVER LETTER

Thursday, September 18, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911

RE: Cross-Gradient Wells Annual Aug 2008

Order No.: 0808240

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 9 sample(s) on 8/14/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab Order:** 0808240

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808240-01A	MW-1	16802	EPA Method 8015B: Diesel Range	8/13/2008 8:00:00 AM
0808240-01A	MW-1	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 8:00:00 AM
0808240-01A	MW-1	R29803	EPA Method 8260B: VOLATILES	8/13/2008 8:00:00 AM
0808240-01B	MW-1	16804	EPA Method 8270C: Semivolatiles	8/13/2008 8:00:00 AM
0808240-01C	MW-1	R29800	EPA Method 300.0: Anions	8/13/2008 8:00:00 AM
0808240-01C	MW-1	R29800	EPA Method 300.0: Anions	8/13/2008 8:00:00 AM
0808240-01C	MW-1	R29866	SM 2320B: Alkalinity	8/13/2008 8:00:00 AM
0808240-01C	MW-1	R29884	Carbon Dioxide	8/13/2008 8:00:00 AM
0808240-01D	MW-1	16906	EPA Method 7470: Mercury	8/13/2008 8:00:00 AM
0808240-01D	MW-1	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 8:00:00 AM
0808240-01E	MW-1	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 8:00:00 AM
0808240-02A	MW-13	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 8:50:00 AM
0808240-02A	MW-13	R29803	EPA Method 8260B: VOLATILES	8/13/2008 8:50:00 AM
0808240-02A	MW-13	16802	EPA Method 8015B: Diesel Range	8/13/2008 8:50:00 AM
0808240-02A	MW-13	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 8:50:00 AM
0808240-02B	MW-13	16804	EPA Method 8270C: Semivolatiles	8/13/2008 8:50:00 AM
0808240-02C	MW-13	R29800	EPA Method 300.0: Anions	8/13/2008 8:50:00 AM
0808240-02C	MW-13	R29800	EPA Method 300.0: Anions	8/13/2008 8:50:00 AM
0808240-02C	MW-13	R29866	SM 2320B: Alkalinity	8/13/2008 8:50:00 AM
0808240-02C	MW-13	R29884	Carbon Dioxide	8/13/2008 8:50:00 AM
0808240-02C	MW-13	R30068	EPA Method 300.0: Anions	8/13/2008 8:50:00 AM
0808240-02D	MW-13	16906	EPA Method 7470: Mercury	8/13/2008 8:50:00 AM
0808240-02D	MW-13	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 8:50:00 AM
0808240-02D	MW-13	16906	EPA Method 7470: Mercury	8/13/2008 8:50:00 AM
0808240-02E	MW-13	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 8:50:00 AM
0808240-02E	MW-13	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 8:50:00 AM
0808240-02E	MW-13	R30124	EPA Method 6010B: Dissolved Metals	8/13/2008 8:50:00 AM
0808240-02E	MW-13	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 8:50:00 AM
0808240-03A	MW-26	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 9:15:00 AM
0808240-03A	MW-26	16802	EPA Method 8015B: Diesel Range	8/13/2008 9:15:00 AM
0808240-03A	MW-26	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 9:15:00 AM
0808240-03A	MW-26	R29824	EPA Method 8260B: VOLATILES	8/13/2008 9:15:00 AM
0808240-03A	MW-26	R29803	EPA Method 8260B: VOLATILES	8/13/2008 9:15:00 AM
0808240-03A	MW-26	R29824	EPA Method 8260B: VOLATILES	8/13/2008 9:15:00 AM
0808240-03B	MW-26	16804	EPA Method 8270C: Semivolatiles	8/13/2008 9:15:00 AM
0808240-03C	MW-26	R29800	EPA Method 300.0: Anions	8/13/2008 9:15:00 AM
0808240-03C	MW-26	R29800	EPA Method 300.0: Anions	8/13/2008 9:15:00 AM
0808240-03C	MW-26	R29866	SM 2320B: Alkalinity	8/13/2008 9:15:00 AM

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab Order:** 0808240

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808240-03C	MW-26	R29884	Carbon Dioxide	8/13/2008 9:15:00 AM
0808240-03D	MW-26	16906	EPA Method 7470: Mercury	8/13/2008 9:15:00 AM
0808240-03D	MW-26	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 9:15:00 AM
0808240-03D	MW-26	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 9:15:00 AM
0808240-03E	MW-26	R30124	EPA Method 6010B: Dissolved Metals	8/13/2008 9:15:00 AM
0808240-03E	MW-26	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 9:15:00 AM
0808240-03E	MW-26	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 9:15:00 AM
0808240-04A	MW-27	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 10:30:00 AM
0808240-04A	MW-27	R29803	EPA Method 8260B: VOLATILES	8/13/2008 10:30:00 AM
0808240-04A	MW-27	16802	EPA Method 8015B: Diesel Range	8/13/2008 10:30:00 AM
0808240-04B	MW-27	16804	EPA Method 8270C: Semivolatiles	8/13/2008 10:30:00 AM
0808240-04C	MW-27	R29800	EPA Method 300.0: Anions	8/13/2008 10:30:00 AM
0808240-04C	MW-27	R29800	EPA Method 300.0: Anions	8/13/2008 10:30:00 AM
0808240-04C	MW-27	R29866	SM 2320B: Alkalinity	8/13/2008 10:30:00 AM
0808240-04C	MW-27	R29884	Carbon Dioxide	8/13/2008 10:30:00 AM
0808240-04C	MW-27	R30012	EPA Method 300.0: Anions	8/13/2008 10:30:00 AM
0808240-04D	MW-27	16906	EPA Method 7470: Mercury	8/13/2008 10:30:00 AM
0808240-04D	MW-27	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 10:30:00 AM
0808240-04E	MW-27	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 10:30:00 AM
0808240-04E	MW-27	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 10:30:00 AM
0808240-04E	MW-27	R30124	EPA Method 6010B: Dissolved Metals	8/13/2008 10:30:00 AM
0808240-05A	MW-31	16802	EPA Method 8015B: Diesel Range	8/13/2008 10:00:00 AM
0808240-05A	MW-31	R29824	EPA Method 8260B: VOLATILES	8/13/2008 10:00:00 AM
0808240-05A	MW-31	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 10:00:00 AM
0808240-05A	MW-31	R29803	EPA Method 8260B: VOLATILES	8/13/2008 10:00:00 AM
0808240-05B	MW-31	16804	EPA Method 8270C: Semivolatiles	8/13/2008 10:00:00 AM
0808240-05C	MW-31	R29884	Carbon Dioxide	8/13/2008 10:00:00 AM
0808240-05C	MW-31	R30012	EPA Method 300.0: Anions	8/13/2008 10:00:00 AM
0808240-05C	MW-31	R29866	SM 2320B: Alkalinity	8/13/2008 10:00:00 AM
0808240-05C	MW-31	R29800	EPA Method 300.0: Anions	8/13/2008 10:00:00 AM
0808240-05C	MW-31	R29800	EPA Method 300.0: Anions	8/13/2008 10:00:00 AM
0808240-05D	MW-31	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 10:00:00 AM
0808240-05D	MW-31	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 10:00:00 AM
0808240-05D	MW-31	16906	EPA Method 7470: Mercury	8/13/2008 10:00:00 AM
0808240-05E	MW-31	R30124	EPA Method 6010B: Dissolved Metals	8/13/2008 10:00:00 AM
0808240-05E	MW-31	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 10:00:00 AM
0808240-05E	MW-31	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 10:00:00 AM
0808240-06A	MW-32	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 11:30:00 AM
0808240-06A	MW-32	R29803	EPA Method 8260B: VOLATILES	8/13/2008 11:30:00 AM
0808240-06A	MW-32	16802	EPA Method 8015B: Diesel Range	8/13/2008 11:30:00 AM

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab Order:** 0808240

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808240-06B	MW-32	16804	EPA Method 8270C: Semivolatiles	8/13/2008 11:30:00 AM
0808240-06C	MW-32	R29800	EPA Method 300.0: Anions	8/13/2008 11:30:00 AM
0808240-06C	MW-32	R29800	EPA Method 300.0: Anions	8/13/2008 11:30:00 AM
0808240-06C	MW-32	R29866	SM 2320B: Alkalinity	8/13/2008 11:30:00 AM
0808240-06C	MW-32	R29884	Carbon Dioxide	8/13/2008 11:30:00 AM
0808240-06C	MW-32	R30012	EPA Method 300.0: Anions	8/13/2008 11:30:00 AM
0808240-06D	MW-32	16906	EPA Method 7470: Mercury	8/13/2008 11:30:00 AM
0808240-06D	MW-32	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 11:30:00 AM
0808240-06E	MW-32	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 11:30:00 AM
0808240-06E	MW-32	R30124	EPA Method 6010B: Dissolved Metals	8/13/2008 11:30:00 AM
0808240-07A	MW-33	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 10:55:00 AM
0808240-07A	MW-33	16802	EPA Method 8015B: Diesel Range	8/13/2008 10:55:00 AM
0808240-07A	MW-33	R29803	EPA Method 8260B: VOLATILES	8/13/2008 10:55:00 AM
0808240-07B	MW-33	16804	EPA Method 8270C: Semivolatiles	8/13/2008 10:55:00 AM
0808240-07C	MW-33	R29800	EPA Method 300.0: Anions	8/13/2008 10:55:00 AM
0808240-07C	MW-33	R29800	EPA Method 300.0: Anions	8/13/2008 10:55:00 AM
0808240-07C	MW-33	R29866	SM 2320B: Alkalinity	8/13/2008 10:55:00 AM
0808240-07C	MW-33	R29884	Carbon Dioxide	8/13/2008 10:55:00 AM
0808240-07C	MW-33	R30012	EPA Method 300.0: Anions	8/13/2008 10:55:00 AM
0808240-07D	MW-33	16906	EPA Method 7470: Mercury	8/13/2008 10:55:00 AM
0808240-07D	MW-33	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 10:55:00 AM
0808240-07E	MW-33	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 10:55:00 AM
0808240-07E	MW-33	R30124	EPA Method 6010B: Dissolved Metals	8/13/2008 10:55:00 AM
0808240-08A	MW-26 FD	R29824	EPA Method 8260B: VOLATILES	8/13/2008 9:20:00 AM
0808240-08A	MW-26 FD	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 9:20:00 AM
0808240-08A	MW-26 FD	R29921	EPA Method 8015B: Gasoline Range	8/13/2008 9:20:00 AM
0808240-08A	MW-26 FD	16802	EPA Method 8015B: Diesel Range	8/13/2008 9:20:00 AM
0808240-08A	MW-26 FD	R29803	EPA Method 8260B: VOLATILES	8/13/2008 9:20:00 AM
0808240-08A	MW-26 FD	R29824	EPA Method 8260B: VOLATILES	8/13/2008 9:20:00 AM
0808240-08B	MW-26 FD	16804	EPA Method 8270C: Semivolatiles	8/13/2008 9:20:00 AM
0808240-08C	MW-26 FD	R29866	SM 2320B: Alkalinity	8/13/2008 9:20:00 AM
0808240-08C	MW-26 FD	R29884	Carbon Dioxide	8/13/2008 9:20:00 AM
0808240-08C	MW-26 FD	R29800	EPA Method 300.0: Anions	8/13/2008 9:20:00 AM
0808240-08C	MW-26 FD	R29800	EPA Method 300.0: Anions	8/13/2008 9:20:00 AM
0808240-08D	MW-26 FD	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 9:20:00 AM
0808240-08D	MW-26 FD	16876	EPA 6010B: Total Recoverable Metals	8/13/2008 9:20:00 AM
0808240-08D	MW-26 FD	16906	EPA Method 7470: Mercury	8/13/2008 9:20:00 AM
0808240-08E	MW-26 FD	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 9:20:00 AM
0808240-08E	MW-26 FD	R29998	EPA Method 6010B: Dissolved Metals	8/13/2008 9:20:00 AM
0808240-08E	MW-26 FD	R30124	EPA Method 6010B: Dissolved Metals	8/13/2008 9:20:00 AM

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab Order:** 0808240

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808240-09A	Trip Blank	R29921	EPA Method 8015B: Gasoline Range	
0808240-09A	Trip Blank	R29803	EPA Method 8260B: VOLATILES	

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-01

**Client Sample ID:** MW-1  
**Collection Date:** 8/13/2008 8:00:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.67	0.10		mg/L	1	8/15/2008 12:15:04 AM
Chloride	19	0.10		mg/L	1	8/15/2008 12:15:04 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 12:15:04 AM
Bromide	0.14	0.10		mg/L	1	8/15/2008 12:15:04 AM
Nitrogen, Nitrate (As N)	1.2	0.10		mg/L	1	8/15/2008 12:15:04 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 12:15:04 AM
Sulfate	130	5.0		mg/L	10	8/15/2008 12:32:28 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-01

**Client Sample ID:** MW-1  
**Collection Date:** 8/13/2008 8:00:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/18/2008 10:58:52 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 10:58:52 AM
Surr: DNOP	111	58-140		%REC	1	8/18/2008 10:58:52 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/25/2008 6:26:15 PM
Surr: BFB	91.7	79.2-121		%REC	1	8/25/2008 6:26:15 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.67	0.10		mg/L	1	8/15/2008 12:15:04 AM
Chloride	19	0.10		mg/L	1	8/15/2008 12:15:04 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 12:15:04 AM
Nitrogen, Nitrate (As N)	1.2	0.10		mg/L	1	8/15/2008 12:15:04 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 12:15:04 AM
Sulfate	130	5.0		mg/L	10	8/15/2008 12:32:28 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:06:15 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 1:32:35 PM
Barium	ND	0.020		mg/L	1	8/29/2008 1:32:35 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 1:32:35 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 1:32:35 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 1:32:35 PM
Iron	ND	0.020		mg/L	1	8/29/2008 1:32:35 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 1:32:35 PM
Manganese	0.022	0.0020		mg/L	1	8/29/2008 1:32:35 PM
Selenium	ND	0.050		mg/L	1	8/29/2008 1:32:35 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 1:32:35 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 1:32:35 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 11:59:49 AM
Barium	0.15	0.020		mg/L	1	8/28/2008 11:59:49 AM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 11:59:49 AM
Chromium	ND	0.0060		mg/L	1	8/28/2008 11:59:49 AM
Lead	ND	0.0050		mg/L	1	8/28/2008 11:59:49 AM
Selenium	ND	0.050		mg/L	1	8/28/2008 11:59:49 AM
Silver	ND	0.0050		mg/L	1	8/28/2008 11:59:49 AM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808240  
Project: Cross-Gradient Wells Annual Aug 2008  
Lab ID: 0808240-01

Client Sample ID: MW-1  
Collection Date: 8/13/2008 8:00:00 AM  
Date Received: 8/14/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-01

**Client Sample ID:** MW-1  
**Collection Date:** 8/13/2008 8:00:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	ND	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	85.9	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	111	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	82.2	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	101	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	96.8	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	70.6	10.7-80.3		%REC	1	8/23/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Toluene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Ethylbenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-01

Client Sample ID: MW-1  
 Collection Date: 8/13/2008 8:00:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Naphthalene	ND	2.0		µg/L	1	8/15/2008 4:12:46 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 4:12:46 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 4:12:46 PM
Acetone	ND	10		µg/L	1	8/15/2008 4:12:46 PM
Bromobenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Bromoform	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Bromomethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
2-Butanone	ND	10		µg/L	1	8/15/2008 4:12:46 PM
Carbon disulfide	ND	10		µg/L	1	8/15/2008 4:12:46 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Chlorobenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Chloroethane	ND	2.0		µg/L	1	8/15/2008 4:12:46 PM
Chloroform	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Chloromethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/15/2008 4:12:46 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Dibromomethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/15/2008 4:12:46 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
2-Hexanone	ND	10		µg/L	1	8/15/2008 4:12:46 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/15/2008 4:12:46 PM
Methylene Chloride	ND	3.0		µg/L	1	8/15/2008 4:12:46 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-01

**Client Sample ID:** MW-1  
**Collection Date:** 8/13/2008 8:00:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Styrene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/15/2008 4:12:46 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/15/2008 4:12:46 PM
Vinyl chloride	ND	1.0		µg/L	1	8/15/2008 4:12:46 PM
Xylenes, Total	ND	1.5		µg/L	1	8/15/2008 4:12:46 PM
Surr: 1,2-Dichloroethane-d4	91.9	68.1-123		%REC	1	8/15/2008 4:12:46 PM
Surr: 4-Bromofluorobenzene	107	53.2-145		%REC	1	8/15/2008 4:12:46 PM
Surr: Dibromofluoromethane	98.8	68.5-119		%REC	1	8/15/2008 4:12:46 PM
Surr: Toluene-d8	97.1	64-131		%REC	1	8/15/2008 4:12:46 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	280	20		mg/L CaCO3	1	8/21/2008
Carbonate	ND	2.0		mg/L CaCO3	1	8/21/2008
Bicarbonate	280	20		mg/L CaCO3	1	8/21/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	250	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-02

**Client Sample ID:** MW-13  
**Collection Date:** 8/13/2008 8:50:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.16	0.10		mg/L	1	8/15/2008 12:49:53 AM
Chloride	240	1.0		mg/L	10	8/15/2008 1:07:17 AM
Nitrogen, Nitrite (As N)	0.58	0.10		mg/L	1	8/15/2008 12:49:53 AM
Bromide	3.6	0.10		mg/L	1	8/15/2008 12:49:53 AM
Nitrogen, Nitrate (As N)	6.0	0.10		mg/L	1	8/15/2008 12:49:53 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 12:49:53 AM
Sulfate	1100	25		mg/L	50	9/3/2008 11:31:15 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-02

Client Sample ID: MW-13  
 Collection Date: 8/13/2008 8:50:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/18/2008 11:32:40 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 11:32:40 AM
Surr: DNOP	111	58-140		%REC	1	8/18/2008 11:32:40 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/26/2008 5:31:42 PM
Surr: BFB	82.9	79.2-121		%REC	1	8/26/2008 5:31:42 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.16	0.10		mg/L	1	8/15/2008 12:49:53 AM
Chloride	240	1.0		mg/L	10	8/15/2008 1:07:17 AM
Nitrogen, Nitrite (As N)	0.58	0.10		mg/L	1	8/15/2008 12:49:53 AM
Nitrogen, Nitrate (As N)	6.0	0.10		mg/L	1	8/15/2008 12:49:53 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 12:49:53 AM
Sulfate	1100	25		mg/L	50	9/3/2008 11:31:15 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.0010		mg/L	5	8/27/2008 4:18:46 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 3:35:54 PM
Barium	0.026	0.020		mg/L	1	8/29/2008 3:35:54 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 3:35:54 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 3:35:54 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 3:35:54 PM
Iron	ND	0.020		mg/L	1	8/29/2008 3:35:54 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 3:35:54 PM
Manganese	1.4	0.010		mg/L	5	8/29/2008 4:44:35 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 9:52:17 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 3:35:54 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 3:35:54 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:04:01 PM
Barium	0.025	0.020		mg/L	1	8/28/2008 12:04:01 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:04:01 PM
Chromium	0.0096	0.0060		mg/L	1	8/28/2008 12:04:01 PM
Lead	ND	0.0050		mg/L	1	8/28/2008 12:04:01 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:04:01 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:04:01 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-02

**Client Sample ID:** MW-13  
**Collection Date:** 8/13/2008 8:50:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-02

**Client Sample ID:** MW-13  
**Collection Date:** 8/13/2008 8:50:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	ND	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	77.0	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	89.4	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	66.8	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	77.7	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	85.6	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	55.9	10.7-80.3		%REC	1	8/23/2008
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Toluene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Ethylbenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Methyl tert-butyl ether (MTBE)	2.2	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-02

**Client Sample ID:** MW-13  
**Collection Date:** 8/13/2008 8:50:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Naphthalene	ND	2.0		µg/L	1	8/15/2008 5:39:08 PM
1-Methylnaphthalene	8.1	4.0		µg/L	1	8/15/2008 5:39:08 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 5:39:08 PM
Acetone	ND	10		µg/L	1	8/15/2008 5:39:08 PM
Bromobenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Bromoform	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Bromomethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
2-Butanone	ND	10		µg/L	1	8/15/2008 5:39:08 PM
Carbon disulfide	ND	10		µg/L	1	8/15/2008 5:39:08 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Chlorobenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Chloroethane	ND	2.0		µg/L	1	8/15/2008 5:39:08 PM
Chloroform	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Chloromethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/15/2008 5:39:08 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Dibromomethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/15/2008 5:39:08 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
2-Hexanone	ND	10		µg/L	1	8/15/2008 5:39:08 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/15/2008 5:39:08 PM
Methylene Chloride	ND	3.0		µg/L	1	8/15/2008 5:39:08 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-02

**Client Sample ID:** MW-13  
**Collection Date:** 8/13/2008 8:50:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Styrene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/15/2008 5:39:08 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/15/2008 5:39:08 PM
Vinyl chloride	ND	1.0		µg/L	1	8/15/2008 5:39:08 PM
Xylenes, Total	ND	1.5		µg/L	1	8/15/2008 5:39:08 PM
Surr: 1,2-Dichloroethane-d4	95.1	68.1-123		%REC	1	8/15/2008 5:39:08 PM
Surr: 4-Bromofluorobenzene	105	53.2-145		%REC	1	8/15/2008 5:39:08 PM
Surr: Dibromofluoromethane	96.9	68.5-119		%REC	1	8/15/2008 5:39:08 PM
Surr: Toluene-d8	96.0	64-131		%REC	1	8/15/2008 5:39:08 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	970	20		mg/L CaCO3	1	8/21/2008
Carbonate	ND	2.0		mg/L CaCO3	1	8/21/2008
Bicarbonate	970	20		mg/L CaCO3	1	8/21/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1000	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-03

**Client Sample ID:** MW-26  
**Collection Date:** 8/13/2008 9:15:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.34	0.10		mg/L	1	8/15/2008 1:59:30 AM
Chloride	390	1.0		mg/L	10	8/15/2008 2:16:54 AM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/15/2008 2:16:54 AM
Bromide	5.5	1.0		mg/L	10	8/15/2008 2:16:54 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 1:59:30 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 1:59:30 AM
Sulfate	ND	0.50		mg/L	1	8/15/2008 1:59:30 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-03

**Client Sample ID:** MW-26  
**Collection Date:** 8/13/2008 9:15:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	2.0	1.0		mg/L	1	8/18/2008 12:06:27 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 12:06:27 PM
Surr: DNOP	108	58-140		%REC	1	8/18/2008 12:06:27 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	7.9	0.50		mg/L	10	8/26/2008 6:02:02 PM
Surr: BFB	159	79.2-121	S	%REC	10	8/26/2008 6:02:02 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.34	0.10		mg/L	1	8/15/2008 1:59:30 AM
Chloride	390	1.0		mg/L	10	8/15/2008 2:16:54 AM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/15/2008 2:16:54 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 1:59:30 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 1:59:30 AM
Sulfate	ND	0.50		mg/L	1	8/15/2008 1:59:30 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:13:21 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 1:39:59 PM
Barium	2.3	0.20		mg/L	10	8/29/2008 5:41:19 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 1:39:59 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 1:39:59 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 1:39:59 PM
Iron	6.9	0.20		mg/L	10	8/29/2008 5:41:19 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 1:39:59 PM
Manganese	3.0	0.020		mg/L	10	8/29/2008 5:41:19 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 9:56:24 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 1:39:59 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 1:39:59 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:06:33 PM
Barium	2.4	0.20		mg/L	10	8/28/2008 1:12:58 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:06:33 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:06:33 PM
Lead	ND	0.0050		mg/L	1	8/28/2008 12:06:33 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:06:33 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:06:33 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808240  
Project: Cross-Gradient Wells Annual Aug 2008  
Lab ID: 0808240-03

Client Sample ID: MW-26  
Collection Date: 8/13/2008 9:15:00 AM  
Date Received: 8/14/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-03

Client Sample ID: MW-26  
 Collection Date: 8/13/2008 9:15:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	13	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	60	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	63.1	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	69.4	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	48.0	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	39.4	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	70.3	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	42.8	10.7-80.3		%REC	1	8/23/2008

**EPA METHOD 8260B: VOLATILES**

Analyst: HL

Benzene	120	2.0		µg/L	2	8/18/2008 4:44:12 PM
Toluene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Ethylbenzene	150	2.0		µg/L	2	8/18/2008 4:44:12 PM
Methyl tert-butyl ether (MTBE)	11	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,2,4-Trimethylbenzene	1200	20		µg/L	20	8/18/2008 4:14:10 PM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-03

Client Sample ID: MW-26  
 Collection Date: 8/13/2008 9:15:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Naphthalene	160	4.0		µg/L	2	8/18/2008 4:44:12 PM
1-Methylnaphthalene	20	8.0		µg/L	2	8/18/2008 4:44:12 PM
2-Methylnaphthalene	36	8.0		µg/L	2	8/18/2008 4:44:12 PM
Acetone	ND	20		µg/L	2	8/18/2008 4:44:12 PM
Bromobenzene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Bromodichloromethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Bromoform	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Bromomethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
2-Butanone	ND	20		µg/L	2	8/18/2008 4:44:12 PM
Carbon disulfide	ND	20		µg/L	2	8/18/2008 4:44:12 PM
Carbon Tetrachloride	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Chlorobenzene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Chloroethane	ND	4.0		µg/L	2	8/18/2008 4:44:12 PM
Chloroform	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Chloromethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
2-Chlorotoluene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
4-Chlorotoluene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
cis-1,2-DCE	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	8/18/2008 4:44:12 PM
Dibromochloromethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Dibromomethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,4-Dichlorobenzene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Dichlorodifluoromethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,1-Dichloroethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,1-Dichloroethene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,2-Dichloropropane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,3-Dichloropropane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
2,2-Dichloropropane	ND	4.0		µg/L	2	8/18/2008 4:44:12 PM
1,1-Dichloropropene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Hexachlorobutadiene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
2-Hexanone	ND	20		µg/L	2	8/18/2008 4:44:12 PM
Isopropylbenzene	120	2.0		µg/L	2	8/18/2008 4:44:12 PM
4-Isopropyltoluene	6.4	2.0		µg/L	2	8/18/2008 4:44:12 PM
4-Methyl-2-pentanone	ND	20		µg/L	2	8/18/2008 4:44:12 PM
Methylene Chloride	ND	6.0		µg/L	2	8/18/2008 4:44:12 PM
n-Butylbenzene	8.2	2.0		µg/L	2	8/18/2008 4:44:12 PM
n-Propylbenzene	140	2.0		µg/L	2	8/18/2008 4:44:12 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-03

**Client Sample ID:** MW-26  
**Collection Date:** 8/13/2008 9:15:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	21	2.0		µg/L	2	8/18/2008 4:44:12 PM
Styrene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
tert-Butylbenzene	3.2	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	8/18/2008 4:44:12 PM
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
trans-1,2-DCE	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Trichloroethene (TCE)	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Trichlorofluoromethane	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
1,2,3-Trichloropropane	ND	4.0		µg/L	2	8/18/2008 4:44:12 PM
Vinyl chloride	ND	2.0		µg/L	2	8/18/2008 4:44:12 PM
Xylenes, Total	3.9	3.0		µg/L	2	8/18/2008 4:44:12 PM
Surr: 1,2-Dichloroethane-d4	104	68.1-123		%REC	2	8/18/2008 4:44:12 PM
Surr: 4-Bromofluorobenzene	114	53.2-145		%REC	2	8/18/2008 4:44:12 PM
Surr: Dibromofluoromethane	100	68.5-119		%REC	2	8/18/2008 4:44:12 PM
Surr: Toluene-d8	127	64-131		%REC	2	8/18/2008 4:44:12 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1000	40		mg/L CaCO3	2	8/21/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/21/2008
Bicarbonate	1000	40		mg/L CaCO3	2	8/21/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1100	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-04

**Client Sample ID:** MW-27  
**Collection Date:** 8/13/2008 10:30:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.47	0.10		mg/L	1	8/15/2008 2:34:19 AM
Chloride	170	1.0		mg/L	10	8/15/2008 2:51:44 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 2:34:19 AM
Bromide	1.2	0.10		mg/L	1	8/15/2008 2:34:19 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 2:34:19 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 2:34:19 AM
Sulfate	990	10		mg/L	20	8/28/2008 12:23:56 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808240  
Project: Cross-Gradient Wells Annual Aug 2008  
Lab ID: 0808240-04

Client Sample ID: MW-27  
Collection Date: 8/13/2008 10:30:00 AM  
Date Received: 8/14/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	1.3	1.0		mg/L	1	8/18/2008 12:40:12 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 12:40:12 PM
Surr: DNOP	108	58-140		%REC	1	8/18/2008 12:40:12 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/25/2008 8:02:36 PM
Surr: BFB	87.1	79.2-121		%REC	1	8/25/2008 8:02:36 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.47	0.10		mg/L	1	8/15/2008 2:34:19 AM
Chloride	170	1.0		mg/L	10	8/15/2008 2:51:44 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/15/2008 2:34:19 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 2:34:19 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 2:34:19 AM
Sulfate	990	10		mg/L	20	8/28/2008 12:23:56 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:16:58 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 1:42:40 PM
Barium	0.028	0.020		mg/L	1	8/29/2008 1:42:40 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 1:42:40 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 1:42:40 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 1:42:40 PM
Iron	1.5	0.20		mg/L	10	8/29/2008 5:43:47 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 1:42:40 PM
Manganese	4.6	0.020		mg/L	10	8/29/2008 5:43:47 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 9:58:55 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 1:42:40 PM
Zinc	0.058	0.050		mg/L	1	8/29/2008 1:42:40 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:09:06 PM
Barium	0.026	0.020		mg/L	1	8/28/2008 12:09:06 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:09:06 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:09:06 PM
Lead	0.0053	0.0050		mg/L	1	8/28/2008 12:09:06 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:09:06 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:09:06 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-04

Client Sample ID: MW-27  
 Collection Date: 8/13/2008 10:30:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

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## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-04

Client Sample ID: MW-27  
 Collection Date: 8/13/2008 10:30:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	ND	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	76.9	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	91.0	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	65.5	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	70.9	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	85.3	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	56.1	10.7-80.3		%REC	1	8/23/2008

**EPA METHOD 8260B: VOLATILES**

Analyst: HL

Benzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Toluene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Ethylbenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808240  
Project: Cross-Gradient Wells Annual Aug 2008  
Lab ID: 0808240-04

Client Sample ID: MW-27  
Collection Date: 8/13/2008 10:30:00 AM  
Date Received: 8/14/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Naphthalene	ND	2.0		µg/L	1	8/15/2008 7:06:35 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 7:06:35 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 7:06:35 PM
Acetone	ND	10		µg/L	1	8/15/2008 7:06:35 PM
Bromobenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Bromoform	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Bromomethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
2-Butanone	ND	10		µg/L	1	8/15/2008 7:06:35 PM
Carbon disulfide	ND	10		µg/L	1	8/15/2008 7:06:35 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Chlorobenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Chloroethane	ND	2.0		µg/L	1	8/15/2008 7:06:35 PM
Chloroform	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Chloromethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/15/2008 7:06:35 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Dibromomethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/15/2008 7:06:35 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
2-Hexanone	ND	10		µg/L	1	8/15/2008 7:06:35 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/15/2008 7:06:35 PM
Methylene Chloride	ND	3.0		µg/L	1	8/15/2008 7:06:35 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-04

Client Sample ID: MW-27  
 Collection Date: 8/13/2008 10:30:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Styrene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/15/2008 7:06:35 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/15/2008 7:06:35 PM
Vinyl chloride	ND	1.0		µg/L	1	8/15/2008 7:06:35 PM
Xylenes, Total	ND	1.5		µg/L	1	8/15/2008 7:06:35 PM
Surr: 1,2-Dichloroethane-d4	94.3	68.1-123		%REC	1	8/15/2008 7:06:35 PM
Surr: 4-Bromofluorobenzene	99.0	53.2-145		%REC	1	8/15/2008 7:06:35 PM
Surr: Dibromofluoromethane	95.4	68.5-119		%REC	1	8/15/2008 7:06:35 PM
Surr: Toluene-d8	99.1	64-131		%REC	1	8/15/2008 7:06:35 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	320	40		mg/L CaCO3	2	8/21/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/21/2008
Bicarbonate	320	40		mg/L CaCO3	2	8/21/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	330	1.0		mg CO2/L	1	8/22/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-05

**Client Sample ID:** MW-31  
**Collection Date:** 8/13/2008 10:00:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.15	0.10		mg/L	1	8/15/2008 3:09:09 AM
Chloride	740	5.0		mg/L	50	8/28/2008 1:16:10 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/15/2008 3:26:33 AM
Bromide	17	1.0		mg/L	10	8/15/2008 3:26:33 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 3:09:09 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 3:09:09 AM
Sulfate	6.4	0.50		mg/L	1	8/15/2008 3:09:09 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-05

**Client Sample ID:** MW-31  
**Collection Date:** 8/13/2008 10:00:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/18/2008 1:14:00 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 1:14:00 PM
Surr: DNOP	112	58-140		%REC	1	8/18/2008 1:14:00 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	30	2.5		mg/L	50	8/25/2008 8:35:35 PM
Surr: BFB	111	79.2-121		%REC	50	8/25/2008 8:35:35 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.15	0.10		mg/L	1	8/15/2008 3:09:09 AM
Chloride	740	5.0		mg/L	50	8/28/2008 1:16:10 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/15/2008 3:26:33 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 3:09:09 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 3:09:09 AM
Sulfate	6.4	0.50		mg/L	1	8/15/2008 3:09:09 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:27:50 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 1:45:20 PM
Barium	1.1	0.10		mg/L	5	8/29/2008 5:46:43 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 1:45:20 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 1:45:20 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 1:45:20 PM
Iron	0.21	0.020		mg/L	1	8/29/2008 1:45:20 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 1:45:20 PM
Manganese	0.71	0.0020		mg/L	1	8/29/2008 1:45:20 PM
Selenium	ND	0.050		mg/L	1	8/29/2008 1:45:20 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 1:45:20 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 1:45:20 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:16:37 PM
Barium	1.1	0.040		mg/L	2	8/28/2008 1:15:26 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:16:37 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:16:37 PM
Lead	ND	0.0050		mg/L	1	8/28/2008 12:16:37 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:16:37 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:16:37 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-05

Client Sample ID: MW-31  
 Collection Date: 8/13/2008 10:00:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-05

**Client Sample ID:** MW-31  
**Collection Date:** 8/13/2008 10:00:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	82	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	140	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	10	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	85.4	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	89.3	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	65.9	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	64.9	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	92.0	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	56.5	10.7-80.3		%REC	1	8/23/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	4000	50		µg/L	50	8/18/2008 5:42:49 PM
Toluene	18	10		µg/L	10	8/15/2008 7:36:36 PM
Ethylbenzene	1400	50		µg/L	50	8/18/2008 5:42:49 PM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,2,4-Trimethylbenzene	1900	50		µg/L	50	8/18/2008 5:42:49 PM
1,3,5-Trimethylbenzene	290	10		µg/L	10	8/15/2008 7:36:36 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-05

**Client Sample ID:** MW-31  
**Collection Date:** 8/13/2008 10:00:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Naphthalene	230	20		µg/L	10	8/15/2008 7:36:36 PM
1-Methylnaphthalene	88	40		µg/L	10	8/15/2008 7:36:36 PM
2-Methylnaphthalene	120	40		µg/L	10	8/15/2008 7:36:36 PM
Acetone	ND	100		µg/L	10	8/15/2008 7:36:36 PM
Bromobenzene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Bromodichloromethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Bromoform	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Bromomethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
2-Butanone	ND	100		µg/L	10	8/15/2008 7:36:36 PM
Carbon disulfide	ND	100		µg/L	10	8/15/2008 7:36:36 PM
Carbon Tetrachloride	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Chlorobenzene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Chloroethane	ND	20		µg/L	10	8/15/2008 7:36:36 PM
Chloroform	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Chloromethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
2-Chlorotoluene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
4-Chlorotoluene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
cis-1,2-DCE	ND	10		µg/L	10	8/15/2008 7:36:36 PM
cis-1,3-Dichloropropene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	8/15/2008 7:36:36 PM
Dibromochloromethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Dibromomethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,2-Dichlorobenzene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,3-Dichlorobenzene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,4-Dichlorobenzene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Dichlorodifluoromethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,1-Dichloroethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,1-Dichloroethene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,2-Dichloropropane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,3-Dichloropropane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
2,2-Dichloropropane	ND	20		µg/L	10	8/15/2008 7:36:36 PM
1,1-Dichloropropene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Hexachlorobutadiene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
2-Hexanone	ND	100		µg/L	10	8/15/2008 7:36:36 PM
Isopropylbenzene	130	10		µg/L	10	8/15/2008 7:36:36 PM
4-Isopropyltoluene	16	10		µg/L	10	8/15/2008 7:36:36 PM
4-Methyl-2-pentanone	ND	100		µg/L	10	8/15/2008 7:36:36 PM
Methylene Chloride	ND	30		µg/L	10	8/15/2008 7:36:36 PM
n-Butylbenzene	70	10		µg/L	10	8/15/2008 7:36:36 PM
n-Propylbenzene	310	10		µg/L	10	8/15/2008 7:36:36 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808240  
Project: Cross-Gradient Wells Annual Aug 2008  
Lab ID: 0808240-05

Client Sample ID: MW-31  
Collection Date: 8/13/2008 10:00:00 AM  
Date Received: 8/14/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	50	10		µg/L	10	8/15/2008 7:36:36 PM
Styrene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
tert-Butylbenzene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	8/15/2008 7:36:36 PM
Tetrachloroethene (PCE)	ND	10		µg/L	10	8/15/2008 7:36:36 PM
trans-1,2-DCE	ND	10		µg/L	10	8/15/2008 7:36:36 PM
trans-1,3-Dichloropropene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,2,3-Trichlorobenzene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,1,1-Trichloroethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,1,2-Trichloroethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Trichloroethene (TCE)	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Trichlorofluoromethane	ND	10		µg/L	10	8/15/2008 7:36:36 PM
1,2,3-Trichloropropane	ND	20		µg/L	10	8/15/2008 7:36:36 PM
Vinyl chloride	ND	10		µg/L	10	8/15/2008 7:36:36 PM
Xylenes, Total	3000	75		µg/L	50	8/18/2008 5:42:49 PM
Surr: 1,2-Dichloroethane-d4	96.1	68.1-123		%REC	10	8/15/2008 7:36:36 PM
Surr: 4-Bromofluorobenzene	102	53.2-145		%REC	10	8/15/2008 7:36:36 PM
Surr: Dibromofluoromethane	97.3	68.5-119		%REC	10	8/15/2008 7:36:36 PM
Surr: Toluene-d8	123	64-131		%REC	10	8/15/2008 7:36:36 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1100	40		mg/L CaCO3	2	8/21/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/21/2008
Bicarbonate	1100	40		mg/L CaCO3	2	8/21/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1100	1.0		mg CO2/L	1	8/22/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-06

**Client Sample ID:** MW-32  
**Collection Date:** 8/13/2008 11:30:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.21	0.10		mg/L	1	8/15/2008 3:43:57 AM
Chloride	1000	5.0		mg/L	50	8/28/2008 1:33:34 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/15/2008 4:01:22 AM
Bromide	4.7	1.0		mg/L	10	8/15/2008 4:01:22 AM
Nitrogen, Nitrate (As N)	26	1.0		mg/L	10	8/15/2008 4:01:22 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 3:43:57 AM
Sulfate	1400	25		mg/L	50	8/28/2008 1:33:34 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-06

**Client Sample ID:** MW-32  
**Collection Date:** 8/13/2008 11:30:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/18/2008 1:47:47 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 1:47:47 PM
Surr: DNOP	110	58-140		%REC	1	8/18/2008 1:47:47 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/25/2008 9:06:04 PM
Surr: BFB	84.2	79.2-121		%REC	1	8/25/2008 9:06:04 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.21	0.10		mg/L	1	8/15/2008 3:43:57 AM
Chloride	1000	5.0		mg/L	50	8/28/2008 1:33:34 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/15/2008 4:01:22 AM
Nitrogen, Nitrate (As N)	26	1.0		mg/L	10	8/15/2008 4:01:22 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 3:43:57 AM
Sulfate	1400	25		mg/L	50	8/28/2008 1:33:34 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:29:39 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 3:40:27 PM
Barium	0.026	0.020		mg/L	1	8/29/2008 3:40:27 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 3:40:27 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 3:40:27 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 3:40:27 PM
Iron	ND	0.020		mg/L	1	8/29/2008 3:40:27 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 3:40:27 PM
Manganese	ND	0.0020		mg/L	1	8/29/2008 3:40:27 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:03:48 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 3:40:27 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 3:40:27 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:19:35 PM
Barium	0.045	0.020		mg/L	1	8/28/2008 12:19:35 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:19:35 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:19:35 PM
Lead	ND	0.0050		mg/L	1	8/28/2008 12:19:35 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:19:35 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:19:35 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808240  
Project: Cross-Gradient Wells Annual Aug 2008  
Lab ID: 0808240-06

Client Sample ID: MW-32  
Collection Date: 8/13/2008 11:30:00 AM  
Date Received: 8/14/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-06

**Client Sample ID:** MW-32  
**Collection Date:** 8/13/2008 11:30:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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## EPA METHOD 8270C: SEMIVOLATILES

Analyst: JDC

Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	ND	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	75.8	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	85.9	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	63.8	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	69.2	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	86.3	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	55.9	10.7-80.3		%REC	1	8/23/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Toluene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Ethylbenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808240  
Project: Cross-Gradient Wells Annual Aug 2008  
Lab ID: 0808240-06

Client Sample ID: MW-32  
Collection Date: 8/13/2008 11:30:00 AM  
Date Received: 8/14/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Naphthalene	ND	2.0		µg/L	1	8/15/2008 8:33:57 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 8:33:57 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 8:33:57 PM
Acetone	ND	10		µg/L	1	8/15/2008 8:33:57 PM
Bromobenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Bromoform	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Bromomethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
2-Butanone	ND	10		µg/L	1	8/15/2008 8:33:57 PM
Carbon disulfide	ND	10		µg/L	1	8/15/2008 8:33:57 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Chlorobenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Chloroethane	ND	2.0		µg/L	1	8/15/2008 8:33:57 PM
Chloroform	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Chloromethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/15/2008 8:33:57 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Dibromomethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/15/2008 8:33:57 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
2-Hexanone	ND	10		µg/L	1	8/15/2008 8:33:57 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/15/2008 8:33:57 PM
Methylene Chloride	ND	3.0		µg/L	1	8/15/2008 8:33:57 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-06

Client Sample ID: MW-32  
 Collection Date: 8/13/2008 11:30:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Styrene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/15/2008 8:33:57 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/15/2008 8:33:57 PM
Vinyl chloride	ND	1.0		µg/L	1	8/15/2008 8:33:57 PM
Xylenes, Total	ND	1.5		µg/L	1	8/15/2008 8:33:57 PM
Surr: 1,2-Dichloroethane-d4	93.8	68.1-123		%REC	1	8/15/2008 8:33:57 PM
Surr: 4-Bromofluorobenzene	100	53.2-145		%REC	1	8/15/2008 8:33:57 PM
Surr: Dibromofluoromethane	97.6	68.5-119		%REC	1	8/15/2008 8:33:57 PM
Surr: Toluene-d8	96.1	64-131		%REC	1	8/15/2008 8:33:57 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	180	20		mg/L CaCO3	1	8/21/2008
Carbonate	ND	2.0		mg/L CaCO3	1	8/21/2008
Bicarbonate	180	20		mg/L CaCO3	1	8/21/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	160	1.0		mg CO2/L	1	8/22/2008

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-07

**Client Sample ID:** MW-33  
**Collection Date:** 8/13/2008 10:55:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.35	0.10		mg/L	1	8/15/2008 4:18:47 AM
Chloride	540	2.0		mg/L	20	8/28/2008 1:50:59 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/15/2008 4:36:11 AM
Bromide	2.7	0.10		mg/L	1	8/15/2008 4:18:47 AM
Nitrogen, Nitrate (As N)	19	1.0		mg/L	10	8/15/2008 4:36:11 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 4:18:47 AM
Sulfate	1100	10		mg/L	20	8/28/2008 1:50:59 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-07

Client Sample ID: MW-33  
 Collection Date: 8/13/2008 10:55:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/18/2008 2:21:37 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 2:21:37 PM
Surr: DNOP	112	58-140		%REC	1	8/18/2008 2:21:37 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/25/2008 11:07:28 PM
Surr: BFB	79.9	79.2-121		%REC	1	8/25/2008 11:07:28 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.35	0.10		mg/L	1	8/15/2008 4:18:47 AM
Chloride	540	2.0		mg/L	20	8/28/2008 1:50:59 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/15/2008 4:36:11 AM
Nitrogen, Nitrate (As N)	19	1.0		mg/L	10	8/15/2008 4:36:11 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 4:18:47 AM
Sulfate	1100	10		mg/L	20	8/28/2008 1:50:59 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:31:28 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 3:48:21 PM
Barium	ND	0.020		mg/L	1	8/29/2008 3:48:21 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 3:48:21 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 3:48:21 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 3:48:21 PM
Iron	ND	0.020		mg/L	1	8/29/2008 3:48:21 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 3:48:21 PM
Manganese	ND	0.0020		mg/L	1	8/29/2008 3:48:21 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:06:17 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 3:48:21 PM
Zinc	0.055	0.050		mg/L	1	8/29/2008 3:48:21 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:30:41 PM
Barium	0.022	0.020		mg/L	1	8/28/2008 12:30:41 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:30:41 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:30:41 PM
Lead	ND	0.0050		mg/L	1	8/28/2008 12:30:41 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:30:41 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:30:41 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-07

Client Sample ID: MW-33  
 Collection Date: 8/13/2008 10:55:00 AM  
 Date Received: 8/14/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808240  
Project: Cross-Gradient Wells Annual Aug 2008  
Lab ID: 0808240-07

Client Sample ID: MW-33  
Collection Date: 8/13/2008 10:55:00 AM  
Date Received: 8/14/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	ND	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	73.5	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	86.0	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	62.1	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	75.4	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	86.2	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	54.4	10.7-80.3		%REC	1	8/23/2008

<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Toluene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Ethylbenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-07

**Client Sample ID:** MW-33  
**Collection Date:** 8/13/2008 10:55:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Naphthalene	ND	2.0		µg/L	1	8/15/2008 9:02:41 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 9:02:41 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 9:02:41 PM
Acetone	ND	10		µg/L	1	8/15/2008 9:02:41 PM
Bromobenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Bromoform	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Bromomethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
2-Butanone	ND	10		µg/L	1	8/15/2008 9:02:41 PM
Carbon disulfide	ND	10		µg/L	1	8/15/2008 9:02:41 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Chlorobenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Chloroethane	ND	2.0		µg/L	1	8/15/2008 9:02:41 PM
Chloroform	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Chloromethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/15/2008 9:02:41 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Dibromomethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/15/2008 9:02:41 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
2-Hexanone	ND	10		µg/L	1	8/15/2008 9:02:41 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/15/2008 9:02:41 PM
Methylene Chloride	ND	3.0		µg/L	1	8/15/2008 9:02:41 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-07

**Client Sample ID:** MW-33  
**Collection Date:** 8/13/2008 10:55:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Styrene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/15/2008 9:02:41 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/15/2008 9:02:41 PM
Vinyl chloride	ND	1.0		µg/L	1	8/15/2008 9:02:41 PM
Xylenes, Total	ND	1.5		µg/L	1	8/15/2008 9:02:41 PM
Surr: 1,2-Dichloroethane-d4	94.3	68.1-123		%REC	1	8/15/2008 9:02:41 PM
Surr: 4-Bromofluorobenzene	105	53.2-145		%REC	1	8/15/2008 9:02:41 PM
Surr: Dibromofluoromethane	96.9	68.5-119		%REC	1	8/15/2008 9:02:41 PM
Surr: Toluene-d8	95.7	64-131		%REC	1	8/15/2008 9:02:41 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	140	20		mg/L CaCO3	1	8/21/2008
Carbonate	ND	2.0		mg/L CaCO3	1	8/21/2008
Bicarbonate	140	20		mg/L CaCO3	1	8/21/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	130	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-08

**Client Sample ID:** MW-26 FD  
**Collection Date:** 8/13/2008 9:20:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.34	0.10		mg/L	1	8/15/2008 5:28:25 AM
Chloride	380	1.0		mg/L	10	8/15/2008 5:45:49 AM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/15/2008 5:45:49 AM
Bromide	5.5	1.0		mg/L	10	8/15/2008 5:45:49 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 5:28:25 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 5:28:25 AM
Sulfate	ND	0.50		mg/L	1	8/15/2008 5:28:25 AM

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-08

**Client Sample ID:** MW-26 FD  
**Collection Date:** 8/13/2008 9:20:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	2.1	1.0		mg/L	1	8/18/2008 3:29:53 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/18/2008 3:29:53 PM
Surr: DNOP	110	58-140		%REC	1	8/18/2008 3:29:53 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	8.2	1.0		mg/L	20	8/26/2008 6:32:28 PM
Surr: BFB	121	79.2-121	S	%REC	20	8/26/2008 6:32:28 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.34	0.10		mg/L	1	8/15/2008 5:28:25 AM
Chloride	380	1.0		mg/L	10	8/15/2008 5:45:49 AM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/15/2008 5:45:49 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/15/2008 5:28:25 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/15/2008 5:28:25 AM
Sulfate	ND	0.50		mg/L	1	8/15/2008 5:28:25 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/27/2008 4:33:18 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/29/2008 3:51:13 PM
Barium	2.3	0.20		mg/L	10	8/29/2008 4:47:24 PM
Cadmium	ND	0.0020		mg/L	1	8/29/2008 3:51:13 PM
Chromium	ND	0.0060		mg/L	1	8/29/2008 3:51:13 PM
Copper	ND	0.0060		mg/L	1	8/29/2008 3:51:13 PM
Iron	7.2	0.20		mg/L	10	8/29/2008 4:47:24 PM
Lead	ND	0.0050		mg/L	1	8/29/2008 3:51:13 PM
Manganese	3.0	0.020		mg/L	10	8/29/2008 4:47:24 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:08:43 PM
Silver	ND	0.0050		mg/L	1	8/29/2008 3:51:13 PM
Zinc	ND	0.050		mg/L	1	8/29/2008 3:51:13 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/28/2008 12:33:11 PM
Barium	2.4	0.20		mg/L	10	8/28/2008 1:18:09 PM
Cadmium	ND	0.0020		mg/L	1	8/28/2008 12:33:11 PM
Chromium	ND	0.0060		mg/L	1	8/28/2008 12:33:11 PM
Lead	ND	0.0050		mg/L	1	8/28/2008 12:33:11 PM
Selenium	ND	0.050		mg/L	1	8/28/2008 12:33:11 PM
Silver	ND	0.0050		mg/L	1	8/28/2008 12:33:11 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-08

**Client Sample ID:** MW-26 FD  
**Collection Date:** 8/13/2008 9:20:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/23/2008
Acenaphthylene	ND	10		µg/L	1	8/23/2008
Aniline	ND	10		µg/L	1	8/23/2008
Anthracene	ND	10		µg/L	1	8/23/2008
Azobenzene	ND	10		µg/L	1	8/23/2008
Benz(a)anthracene	ND	10		µg/L	1	8/23/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/23/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/23/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/23/2008
Benzoic acid	ND	20		µg/L	1	8/23/2008
Benzyl alcohol	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/23/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/23/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/23/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/23/2008
Carbazole	ND	10		µg/L	1	8/23/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/23/2008
4-Chloroaniline	ND	10		µg/L	1	8/23/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/23/2008
2-Chlorophenol	ND	10		µg/L	1	8/23/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/23/2008
Chrysene	ND	10		µg/L	1	8/23/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/23/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/23/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/23/2008
Dibenzofuran	ND	10		µg/L	1	8/23/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/23/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/23/2008
Diethyl phthalate	ND	10		µg/L	1	8/23/2008
Dimethyl phthalate	ND	10		µg/L	1	8/23/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/23/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/23/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/23/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/23/2008
Fluoranthene	ND	10		µg/L	1	8/23/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-08

**Client Sample ID:** MW-26 FD  
**Collection Date:** 8/13/2008 9:20:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/23/2008
Hexachlorobenzene	ND	10		µg/L	1	8/23/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/23/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/23/2008
Hexachloroethane	ND	10		µg/L	1	8/23/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/23/2008
Isophorone	ND	10		µg/L	1	8/23/2008
2-Methylnaphthalene	14	10		µg/L	1	8/23/2008
2-Methylphenol	ND	10		µg/L	1	8/23/2008
3+4-Methylphenol	ND	10		µg/L	1	8/23/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/23/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/23/2008
Naphthalene	63	10		µg/L	1	8/23/2008
2-Nitroaniline	ND	10		µg/L	1	8/23/2008
3-Nitroaniline	ND	10		µg/L	1	8/23/2008
4-Nitroaniline	ND	10		µg/L	1	8/23/2008
Nitrobenzene	ND	10		µg/L	1	8/23/2008
2-Nitrophenol	ND	10		µg/L	1	8/23/2008
4-Nitrophenol	ND	10		µg/L	1	8/23/2008
Pentachlorophenol	ND	40		µg/L	1	8/23/2008
Phenanthrene	ND	10		µg/L	1	8/23/2008
Phenol	ND	10		µg/L	1	8/23/2008
Pyrene	ND	10		µg/L	1	8/23/2008
Pyridine	ND	10		µg/L	1	8/23/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/23/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/23/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/23/2008
Surr: 2,4,6-Tribromophenol	86.4	16.6-150		%REC	1	8/23/2008
Surr: 2-Fluorobiphenyl	76.8	19.6-134		%REC	1	8/23/2008
Surr: 2-Fluorophenol	42.2	9.54-113		%REC	1	8/23/2008
Surr: 4-Terphenyl-d14	60.1	22.7-145		%REC	1	8/23/2008
Surr: Nitrobenzene-d5	72.5	14.6-134		%REC	1	8/23/2008
Surr: Phenol-d5	36.1	10.7-80.3		%REC	1	8/23/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	120	2.0		µg/L	2	8/18/2008 6:42:47 PM
Toluene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Ethylbenzene	140	2.0		µg/L	2	8/18/2008 6:42:47 PM
Methyl tert-butyl ether (MTBE)	11	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,2,4-Trimethylbenzene	1100	20		µg/L	20	8/18/2008 6:12:49 PM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM

**Qualifiers:**  
 \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808240  
Project: Cross-Gradient Wells Annual Aug 2008  
Lab ID: 0808240-08

Client Sample ID: MW-26 FD  
Collection Date: 8/13/2008 9:20:00 AM  
Date Received: 8/14/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Naphthalene	150	4.0		µg/L	2	8/18/2008 6:42:47 PM
1-Methylnaphthalene	19	8.0		µg/L	2	8/18/2008 6:42:47 PM
2-Methylnaphthalene	33	8.0		µg/L	2	8/18/2008 6:42:47 PM
Acetone	ND	20		µg/L	2	8/18/2008 6:42:47 PM
Bromobenzene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Bromodichloromethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Bromoform	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Bromomethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
2-Butanone	ND	20		µg/L	2	8/18/2008 6:42:47 PM
Carbon disulfide	ND	20		µg/L	2	8/18/2008 6:42:47 PM
Carbon Tetrachloride	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Chlorobenzene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Chloroethane	ND	4.0		µg/L	2	8/18/2008 6:42:47 PM
Chloroform	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Chloromethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
2-Chlorotoluene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
4-Chlorotoluene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
cis-1,2-DCE	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	8/18/2008 6:42:47 PM
Dibromochloromethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Dibromomethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,4-Dichlorobenzene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Dichlorodifluoromethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,1-Dichloroethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,1-Dichloroethene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,2-Dichloropropane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,3-Dichloropropane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
2,2-Dichloropropane	ND	4.0		µg/L	2	8/18/2008 6:42:47 PM
1,1-Dichloropropene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Hexachlorobutadiene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
2-Hexanone	ND	20		µg/L	2	8/18/2008 6:42:47 PM
Isopropylbenzene	110	2.0		µg/L	2	8/18/2008 6:42:47 PM
4-Isopropyltoluene	5.9	2.0		µg/L	2	8/18/2008 6:42:47 PM
4-Methyl-2-pentanone	ND	20		µg/L	2	8/18/2008 6:42:47 PM
Methylene Chloride	ND	6.0		µg/L	2	8/18/2008 6:42:47 PM
n-Butylbenzene	7.3	2.0		µg/L	2	8/18/2008 6:42:47 PM
n-Propylbenzene	130	2.0		µg/L	2	8/18/2008 6:42:47 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-08

**Client Sample ID:** MW-26 FD  
**Collection Date:** 8/13/2008 9:20:00 AM  
**Date Received:** 8/14/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	19	2.0		µg/L	2	8/18/2008 6:42:47 PM
Styrene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
tert-Butylbenzene	2.9	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	8/18/2008 6:42:47 PM
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
trans-1,2-DCE	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Trichloroethene (TCE)	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Trichlorofluoromethane	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
1,2,3-Trichloropropane	ND	4.0		µg/L	2	8/18/2008 6:42:47 PM
Vinyl chloride	ND	2.0		µg/L	2	8/18/2008 6:42:47 PM
Xylenes, Total	3.9	3.0		µg/L	2	8/18/2008 6:42:47 PM
Surr: 1,2-Dichloroethane-d4	109	68.1-123		%REC	2	8/18/2008 6:42:47 PM
Surr: 4-Bromofluorobenzene	120	53.2-145		%REC	2	8/18/2008 6:42:47 PM
Surr: Dibromofluoromethane	101	68.5-119		%REC	2	8/18/2008 6:42:47 PM
Surr: Toluene-d8	130	64-131		%REC	2	8/18/2008 6:42:47 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1000	40		mg/L CaCO3	2	8/21/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/21/2008
Bicarbonate	1000	40		mg/L CaCO3	2	8/21/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1100	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 18-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808240  
 Project: Cross-Gradient Wells Annual Aug 2008  
 Lab ID: 0808240-09

Client Sample ID: Trip Blank  
 Collection Date:  
 Date Received: 8/14/2008  
 Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/26/2008 12:10:52 AM
Surr: BFB	79.4	79.2-121		%REC	1	8/26/2008 12:10:52 AM
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Toluene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Ethylbenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Naphthalene	ND	2.0		µg/L	1	8/15/2008 10:29:59 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 10:29:59 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/15/2008 10:29:59 PM
Acetone	ND	10		µg/L	1	8/15/2008 10:29:59 PM
Bromobenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Bromoform	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Bromomethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
2-Butanone	ND	10		µg/L	1	8/15/2008 10:29:59 PM
Carbon disulfide	ND	10		µg/L	1	8/15/2008 10:29:59 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Chlorobenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Chloroethane	ND	2.0		µg/L	1	8/15/2008 10:29:59 PM
Chloroform	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Chloromethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/15/2008 10:29:59 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Dibromomethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 18-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808240  
**Project:** Cross-Gradient Wells Annual Aug 2008  
**Lab ID:** 0808240-09

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Date Received:** 8/14/2008  
**Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
2,2-Dichloropropane	ND	2.0		µg/L	1	8/15/2008 10:29:59 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
2-Hexanone	ND	10		µg/L	1	8/15/2008 10:29:59 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/15/2008 10:29:59 PM
Methylene Chloride	ND	3.0		µg/L	1	8/15/2008 10:29:59 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
sec-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Styrene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/15/2008 10:29:59 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/15/2008 10:29:59 PM
Vinyl chloride	ND	1.0		µg/L	1	8/15/2008 10:29:59 PM
Xylenes, Total	ND	1.5		µg/L	1	8/15/2008 10:29:59 PM
Surr: 1,2-Dichloroethane-d4	93.3	68.1-123		%REC	1	8/15/2008 10:29:59 PM
Surr: 4-Bromofluorobenzene	103	53.2-145		%REC	1	8/15/2008 10:29:59 PM
Surr: Dibromofluoromethane	95.7	68.5-119		%REC	1	8/15/2008 10:29:59 PM
Surr: Toluene-d8	97.6	64-131		%REC	1	8/15/2008 10:29:59 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



**CASE NARRATIVE**

September 8, 2008

Lab Name: Anatek Labs, Inc. 1282 Alturas Drive, Moscow, ID 83843 [www.anateklabs.com](http://www.anateklabs.com) FL NELAP  
E87893, NV ID13-2004-31, WA DOE C126, OR ELAP ID200001, MT 0028, ID, CO, NM

Project Tracking No.: 0808240  
Anatek Batch: 080815024

**Project Summary:** Eight (8) water samples were received on 8/15/2008 for metals (EPA 6020A) analysis. All samples were received in good condition and with the appropriate chain of custody. Samples were received at 4.1C.

<u>Client Sample ID</u>	<u>Anatek Sample ID</u>	<u>Method/Prep Method</u>
0808240-01F / MW-1	080815024-001	EPA 6020A/3005A
0808240-02F / MW-13	080815024-002	EPA 6020A/3005A
0808240-03F / MW-26	080815024-003	EPA 6020A/3005A
0808240-04F / MW-27	080815024-004	EPA 6020A/3005A
0808240-05F / MW-31	080815024-005	EPA 6020A/3005A
0808240-06F / MW-32	080815024-006	EPA 6020A/3005A
0808240-07F / MW-33	080815024-007	EPA 6020A/3005A
0808240-08F / MW-26 FD	080815024-008	EPA 6020A/3005A

**QA/QC Checks**

<u>Parameters</u>	<u>Yes / No</u>	<u>Exceptions / Deviations</u>
Sample Holding Time Valid?	Y	NA
Surrogate Recoveries Valid?	Y	NA
QC Sample(s) Recoveries Valid?	Y	NA
Method Blank(s) Valid?	Y	NA
Tune(s) Valid?	Y	NA
Internal Standard Responses Valid?	Y	NA
Initial Calibration Curve(s) Valid?	Y	NA
Continuing Calibration(s) Valid?	Y	NA
Comments:	Y	NA

**1. Holding Time Requirements**

No problems encountered.

**2. GC/MS Tune Requirements**

NA

**3. Calibration Requirements**

No problems encountered.

**4. Surrogate Recovery Requirements**

NA

**5. QC Sample (LCS/MS/MSD) Recovery Requirements**

No problems encountered.

**6. Method Blank Requirements**

The method blanks were non-detect (<MDL) for all analytes. No problems encountered.

**7. Internal Standard(s) Response Requirements**

No problems encountered.

**8. Comments**

No problems encountered.

**I certify that this data package is in compliance with the terms and conditions of the contract. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee.**

Approved by: \_\_\_\_\_

*John W. Calk*

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

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

**Batch #:** 080815024  
**Project Name:** 0808240

## Analytical Results Report

<b>Sample Number</b>	080815024-001	<b>Sampling Date</b>	8/13/2008	<b>Date/Time Received</b>	8/15/2008 10:45 AM
<b>Client Sample ID</b>	0808240-01F / MW-1	<b>Sampling Time</b>	8:00 AM	<b>Extraction Date</b>	8/28/2008
<b>Matrix</b>	Water	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.00219	mg/L	0.001	8/28/2008	ETL	EPA 6020A	

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

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

**Batch #:** 080815024  
**Project Name:** 0808240

## Analytical Results Report

<b>Sample Number</b>	080815024-002	<b>Sampling Date</b>	8/13/2008	<b>Date/Time Received</b>	8/15/2008 10:45 AM
<b>Client Sample ID</b>	0808240-02F / MW-13	<b>Sampling Time</b>	8:50 AM	<b>Extraction Date</b>	8/28/2008
<b>Matrix</b>	Water	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.00973	mg/L	0.001	8/28/2008	ETL	EPA 6020A	

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**Batch #:** 080815024  
**Project Name:** 0808240

## Analytical Results Report

<b>Sample Number</b>	080815024-003	<b>Sampling Date</b>	8/13/2008	<b>Date/Time Received</b>	8/15/2008 10:45 AM
<b>Client Sample ID</b>	0808240-03F / MW-26	<b>Sampling Time</b>	9:15 AM	<b>Extraction Date</b>	8/28/2008
<b>Matrix</b>	Water	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/28/2008	ETL	EPA 6020A	

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**Batch #:** 080815024  
**Project Name:** 0808240

## Analytical Results Report

<b>Sample Number</b>	080815024-004	<b>Sampling Date</b>	8/13/2008	<b>Date/Time Received</b>	8/15/2008 10:45 AM
<b>Client Sample ID</b>	0808240-04F / MW-27	<b>Sampling Time</b>	10:30 AM	<b>Extraction Date</b>	8/28/2008
<b>Matrix</b>	Water	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.00191	mg/L	0.001	8/28/2008	ETL	EPA 6020A	

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**Batch #:** 080815024  
**Project Name:** 0808240

## Analytical Results Report

<b>Sample Number</b>	080815024-005	<b>Sampling Date</b>	8/13/2008	<b>Date/Time Received</b>	8/15/2008 10:45 AM
<b>Client Sample ID</b>	0808240-05F / MW-31	<b>Sampling Time</b>	10:00 AM	<b>Extraction Date</b>	8/28/2008
<b>Matrix</b>	Water	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/28/2008	ETL	EPA 6020A	

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**Batch #:** 080815024  
**Project Name:** 0808240

## Analytical Results Report

<b>Sample Number</b>	080815024-006	<b>Sampling Date</b>	8/13/2008	<b>Date/Time Received</b>	8/15/2008 10:45 AM
<b>Client Sample ID</b>	0808240-06F / MW-32	<b>Sampling Time</b>	11:30 AM	<b>Extraction Date</b>	8/28/2008
<b>Matrix</b>	Water	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.0105	mg/L	0.001	8/28/2008	ETL	EPA 6020A	



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**Batch #:** 080815024  
**Project Name:** 0808240

## Analytical Results Report

<b>Sample Number</b>	080815024-007	<b>Sampling Date</b>	8/13/2008	<b>Date/Time Received</b>	8/15/2008 10:45 AM
<b>Client Sample ID</b>	0808240-07F / MW-33	<b>Sampling Time</b>	10:55 AM	<b>Extraction Date</b>	8/28/2008
<b>Matrix</b>	Water	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.00735	mg/L	0.001	8/28/2008	ETL	EPA 6020A	

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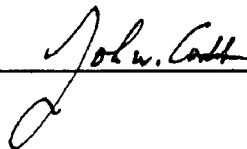
**Batch #:** 080815024  
**Project Name:** 0808240

## Analytical Results Report

<b>Sample Number</b>	080815024-008	<b>Sampling Date</b>	8/13/2008	<b>Date/Time Received</b>	8/15/2008 10:45 AM
<b>Client Sample ID</b>	0808240-08F / MW-26 FD	<b>Sampling Time</b>	9:20 AM	<b>Extraction Date</b>	8/28/2008
<b>Matrix</b>	Water	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/28/2008	ETL	EPA 6020A	

Authorized Signature



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

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Monday, September 08, 2008

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Printed on: 8 September 2008 15:18:40

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**Attn:** ANDY FREEMAN

**Batch #:** 080815024  
**Project Name:** 0808240

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dissolved Uranium	0.0484	mg/L	0.05	96.8	85-115	8/28/2008	8/28/2008

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
080815024-002	Dissolved Uranium	0.00973	0.0598	mg/L	0.05	100.1	75-125	8/28/2008	8/28/2008

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dissolved Uranium	0.0600	mg/L	0.05	100.5	0.3	0-20	8/28/2008	8/28/2008

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Dissolved Uranium	ND	mg/L	0.001	8/28/2008	8/28/2008

AR Acceptable Range  
ND Not Detected  
PQL Practical Quantitation Limit  
RPD Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Monday, September 08, 2008

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18-Sep-08

Lab Order: 0808240  
Client: Western Refining Southwest, Inc.  
Project: Cross-Gradient Wells Annual Aug

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808240-01A	MW-1	8/13/2008 8:00:00 AM	Aqueous	EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/25/2008
0808240-01B				EPA Method 8260B: VOLATILES	R29803		8/15/2008
0808240-01C				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
				Carbon Dioxide	R29884		8/22/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				SM 2320B: Alkalinity	R29866		8/21/2008
0808240-01D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808240-01E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
0808240-02A	MW-13	8/13/2008 8:50:00 AM		EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/25/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29803		8/15/2008
0808240-02B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
0808240-02C				Carbon Dioxide	R29884		8/22/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R30068		9/3/2008
				SM 2320B: Alkalinity	R29866		8/21/2008
0808240-02D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808240-02E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008

# Hall Environmental Analysis Laboratory, Inc.

18-Sep-08

Lab Order: 0808240

Client: Western Refining Southwest, Inc.

Project: Cross-Gradient Wells Annual Aug

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808240-02E	MW-13	8/13/2008 8:50:00 AM	Aqueous	EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
0808240-03A	MW-26	8/13/2008 9:15:00 AM		EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/25/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29824		8/18/2008
				EPA Method 8260B: VOLATILES	R29803		8/15/2008
				EPA Method 8260B: VOLATILES	R29824		8/18/2008
0808240-03B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
0808240-03C				Carbon Dioxide	R29884		8/22/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				SM 2320B: Alkalinity	R29866		8/21/2008
0808240-03D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808240-03E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
0808240-04A	MW-27	8/13/2008 10:30:00 AM		EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/25/2008
				EPA Method 8260B: VOLATILES	R29803		8/15/2008
0808240-04B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
0808240-04C				Carbon Dioxide	R29884		8/22/2008

# Hall Environmental Analysis Laboratory, Inc.

18-Sep-08

Lab Order: 0808240

Client: Western Refining Southwest, Inc.

Project: Cross-Gradient Wells Annual Aug

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808240-04C	MW-27	8/13/2008 10:30:00 AM	Aqueous	EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R30012		8/28/2008
				SM 2320B: Alkalinity	R29866		8/21/2008
0808240-04D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808240-04E				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
0808240-05A	MW-31	8/13/2008 10:00:00 AM		EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/25/2008
				EPA Method 8260B: VOLATILES	R29803		8/15/2008
0808240-05B				EPA Method 8260B: VOLATILES	R29824		8/18/2008
0808240-05C				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
				Carbon Dioxide	R29884		8/22/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R30012		8/28/2008
				SM 2320B: Alkalinity	R29866		8/21/2008
0808240-05D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808240-05E				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008

# Hall Environmental Analysis Laboratory, Inc.

18-Sep-08

Lab Order: 0808240  
 Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808240-06A	MW-32	8/13/2008 11:30:00 AM	Aqueous	EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/25/2008
0808240-06B				EPA Method 8260B: VOLATILES	R29803		8/15/2008
0808240-06C				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
				Carbon Dioxide	R29884		8/22/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R30012		8/28/2008
				SM 2320B: Alkalinity	R29866		8/21/2008
0808240-06D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808240-06E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
0808240-07A	MW-33	8/13/2008 10:55:00 AM		EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/25/2008
				EPA Method 8260B: VOLATILES	R29803		8/15/2008
0808240-07B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
0808240-07C				Carbon Dioxide	R29884		8/22/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R30012		8/28/2008
				SM 2320B: Alkalinity	R29866		8/21/2008
0808240-07D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808240-07E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008

# Hall Environmental Analysis Laboratory, Inc.

18-Sep-08

Lab Order: 0808240  
 Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808240-07E	MW-33	8/13/2008 10:55:00 AM	Aqueous	EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
0808240-08A	MW-26 FD	8/13/2008 9:20:00 AM		EPA Method 8015B: Diesel Range	16802	8/18/2008	8/18/2008
				EPA Method 8015B: Gasoline Range	R29921		8/25/2008
				EPA Method 8015B: Gasoline Range	R29921		8/26/2008
				EPA Method 8260B: VOLATILES	R29824		8/18/2008
				EPA Method 8260B: VOLATILES	R29803		8/15/2008
				EPA Method 8260B: VOLATILES	R29824		8/18/2008
0808240-08B				EPA Method 8270C: Semivolatiles	16804	8/18/2008	8/23/2008
0808240-08C				Carbon Dioxide	R29884		8/22/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				EPA Method 300.0: Anions	R29800		8/15/2008
				SM 2320B: Alkalinity	R29866		8/21/2008
0808240-08D				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA 6010B: Total Recoverable Metals	16876	8/25/2008	8/28/2008
				EPA Method 7470: Mercury	16906	8/27/2008	8/27/2008
0808240-08E				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R29998		8/29/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
0808240-09A	Trip Blank		Trip Blank	EPA Method 8015B: Gasoline Range	R29921		8/26/2008
0808240-08C	Trip Blank			EPA Method 8260B: VOLATILES	R29803		8/15/2008



## QA/QC SUMMARY REPORT

**Client:** Western Refining Southwest, Inc.  
**Project:** Cross-Gradient Wells Annual Aug 2008

**Work Order:** 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 300.0: Anions</b>									
<b>Sample ID: 0808240-08CMSD</b>		<i>MSD</i>				<b>Batch ID: R29800</b>	<b>Analysis Date:</b>	8/15/2008 6:20:38 AM	
Fluoride	0.8267	mg/L	0.10	97.0	65.1	121	1.49	20	
Nitrogen, Nitrite (As N)	0.9680	mg/L	0.10	96.8	52.9	128	1.04	20	
Nitrogen, Nitrate (As N)	2.537	mg/L	0.10	99.5	83.8	112	0.647	20	
Phosphorus, Orthophosphate (As P)	2.290	mg/L	0.50	45.8	77.6	118	4.20	20	S
Sulfate	10.85	mg/L	0.50	104	59.4	126	0.733	20	
<b>Sample ID: 0808240-08CMSD</b>		<i>MSD</i>				<b>Batch ID: R30068</b>	<b>Analysis Date:</b>	9/3/2008 12:06:05 PM	
Phosphorus, Orthophosphate (As P)	4.569	mg/L	0.50	91.4	77.6	118	4.87	20	
<b>Sample ID: MB</b>		<i>MBLK</i>				<b>Batch ID: R29800</b>	<b>Analysis Date:</b>	8/14/2008 12:03:48 PM	
Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						
<b>Sample ID: MB</b>		<i>MBLK</i>				<b>Batch ID: R30012</b>	<b>Analysis Date:</b>	8/28/2008 9:47:15 AM	
Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						
<b>Sample ID: MB</b>		<i>MBLK</i>				<b>Batch ID: R30068</b>	<b>Analysis Date:</b>	9/3/2008 10:04:12 AM	
Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						
<b>Sample ID: LCS</b>		<i>LCS</i>				<b>Batch ID: R29800</b>	<b>Analysis Date:</b>	8/14/2008 12:21:13 PM	
Fluoride	0.4662	mg/L	0.10	93.2	90	110			
Chloride	5.081	mg/L	0.10	102	90	110			
Nitrogen, Nitrite (As N)	1.038	mg/L	0.10	104	90	110			
Nitrogen, Nitrate (As N)	2.577	mg/L	0.10	103	90	110			
Phosphorus, Orthophosphate (As P)	4.920	mg/L	0.50	98.4	90	110			
Sulfate	10.61	mg/L	0.50	106	90	110			
<b>Sample ID: LCS</b>		<i>LCS</i>				<b>Batch ID: R30012</b>	<b>Analysis Date:</b>	8/28/2008 10:04:39 AM	
Fluoride	0.5088	mg/L	0.10	102	90	110			
Chloride	4.854	mg/L	0.10	97.1	90	110			
Nitrogen, Nitrite (As N)	0.9857	mg/L	0.10	98.6	90	110			
Nitrogen, Nitrate (As N)	2.504	mg/L	0.10	100	90	110			
Phosphorus, Orthophosphate (As P)	4.890	mg/L	0.50	97.8	90	110			
Sulfate	10.09	mg/L	0.50	101	90	110			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 300.0: Anions</b>									
Sample ID: LCS	LCS				Batch ID: R30068	Analysis Date: 9/3/2008 10:21:36 AM			
Fluoride	0.5019	mg/L	0.10	100	90	110			
Chloride	4.758	mg/L	0.10	95.2	90	110			
Nitrogen, Nitrite (As N)	0.9222	mg/L	0.10	92.2	90	110			
Nitrogen, Nitrate (As N)	2.438	mg/L	0.10	97.5	90	110			
Phosphorus, Orthophosphate (As P)	4.756	mg/L	0.50	95.1	90	110			
Sulfate	9.718	mg/L	0.50	97.2	90	110			
Sample ID: 0808240-08CMS	MS				Batch ID: R29800	Analysis Date: 8/15/2008 6:03:14 AM			
Fluoride	0.8392	mg/L	0.10	99.5	65.1	121			
Nitrogen, Nitrite (As N)	0.9580	mg/L	0.10	95.8	52.9	128			
Nitrogen, Nitrate (As N)	2.553	mg/L	0.10	100	83.8	112			
Phosphorus, Orthophosphate (As P)	2.196	mg/L	0.50	43.9	77.6	118			S
Sulfate	10.77	mg/L	0.50	103	59.4	126			
Sample ID: 0808240-08CMS	MS				Batch ID: R30068	Analysis Date: 9/3/2008 11:48:40 AM			
Phosphorus, Orthophosphate (As P)	4.351	mg/L	0.50	87.0	77.6	118			
<b>Method: SM 2320B: Alkalinity</b>									
Sample ID: 0808240-06CMSD	MSD				Batch ID: R29866	Analysis Date: 8/21/2008			
Alkalinity, Total (As CaCO <sub>3</sub> )	253.0	mg/L CaC	20	96.3	80	120	0.794	20	
Sample ID: MB	MBLK				Batch ID: R29866	Analysis Date: 8/21/2008			
Alkalinity, Total (As CaCO <sub>3</sub> )	ND	mg/L CaC	20						
Carbonate	ND	mg/L CaC	2.0						
Bicarbonate	ND	mg/L CaC	20						
Sample ID: LCS	LCS				Batch ID: R29866	Analysis Date: 8/21/2008			
Alkalinity, Total (As CaCO <sub>3</sub> )	82.00	mg/L CaC	20	101	80	120			
Sample ID: 0808240-06CMS	MS				Batch ID: R29866	Analysis Date: 8/21/2008			
Alkalinity, Total (As CaCO <sub>3</sub> )	251.0	mg/L CaC	20	93.8	80	120			
<b>Method: EPA Method 8015B: Diesel Range</b>									
Sample ID: MB-16802	MBLK				Batch ID: 16802	Analysis Date: 8/18/2008 9:18:03 AM			
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Surr: DNOP	1.225	mg/L	0	123	58	140			
Sample ID: LCS-16802	LCS				Batch ID: 16802	Analysis Date: 8/18/2008 9:51:32 AM			
Diesel Range Organics (DRO)	4.911	mg/L	1.0	98.2	74	157			
Surr: DNOP	0.5625	mg/L	0	113	58	140			
Sample ID: LCSD-16802	LCSD				Batch ID: 16802	Analysis Date: 8/18/2008 10:25:06 AM			
Diesel Range Organics (DRO)	4.761	mg/L	1.0	95.2	74	157	3.10	23	
Surr: DNOP	0.5491	mg/L	0	110	58	140	0	0	

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 8015B: Gasoline Range</b>									
<b>Sample ID: 5ML RB</b>		<i>MBLK</i>							
					Batch ID: <b>R29921</b>	Analysis Date: 8/25/2008 9:06:48 AM			
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	20.37	mg/L	0	102	79.2	121			
<b>Sample ID: 5ML RB</b>		<i>MBLK</i>							
					Batch ID: <b>R29921</b>	Analysis Date: 8/25/2008 9:06:48 AM			
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	20.37	mg/L	0	102	79.2	121			
<b>Sample ID: 5ML RB</b>		<i>MBLK</i>							
					Batch ID: <b>R29921</b>	Analysis Date: 8/26/2008 2:59:23 PM			
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	17.58	mg/L	0	87.9	79.2	121			
<b>Sample ID: LCS-GRO</b>		<i>LCS</i>							
					Batch ID: <b>R29921</b>	Analysis Date: 8/25/2008 5:25:30 PM			
Gasoline Range Organics (GRO)	0.5666	mg/L	0.050	113	80	115			
Surr: BFB	21.15	mg/L	0	106	79.2	121			
<b>Sample ID: LCS-GRO</b>		<i>LCS</i>							
					Batch ID: <b>R29921</b>	Analysis Date: 8/25/2008 5:25:30 PM			
Gasoline Range Organics (GRO)	0.5666	mg/L	0.050	113	80	115			
Surr: BFB	21.15	mg/L	0	106	79.2	121			
<b>Sample ID: LCS-GRO</b>		<i>LCS</i>							
					Batch ID: <b>R29921</b>	Analysis Date: 8/26/2008 4:30:47 PM			
Gasoline Range Organics (GRO)	0.4266	mg/L	0.050	85.3	80	115			
Surr: BFB	17.61	mg/L	0	88.0	79.2	121			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 0808240-01a MSD

MSD

Batch ID: R29803 Analysis Date: 8/15/2008 5:10:23 PM

Benzene	21.48	µg/L	1.0	107	72.4	126	2.32	15	
Toluene	20.09	µg/L	1.0	100	79.2	115	0.272	15	
Chlorobenzene	22.86	µg/L	1.0	114	83.1	111	1.52	15	S
1,1-Dichloroethene	23.84	µg/L	1.0	119	81.4	122	1.59	17.8	
Trichloroethene (TCE)	20.72	µg/L	1.0	104	64.4	118	5.05	19.8	
Surr: 1,2-Dichloroethane-d4	9.394	µg/L	0	93.9	68.1	123	0	0	
Surr: 4-Bromofluorobenzene	10.51	µg/L	0	105	53.2	145	0	0	
Surr: Dibromofluoromethane	9.900	µg/L	0	99.0	68.5	119	0	0	
Surr: Toluene-d8	9.609	µg/L	0	96.1	64	131	0	0	

Sample ID: 5ml rb

MBLK

Batch ID: R29803 Analysis Date: 8/15/2008 10:31:04 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29803 Analysis Date: 8/15/2008 10:31:04 AM

1,1-Dichloroethane	ND	µg/L	1.0						
1,1-Dichloroethene	ND	µg/L	1.0						
1,2-Dichloropropane	ND	µg/L	1.0						
1,3-Dichloropropane	ND	µg/L	1.0						
2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	µg/L	1.0						
Hexachlorobutadiene	ND	µg/L	1.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	µg/L	1.0						
4-Isopropyltoluene	ND	µg/L	1.0						
4-Methyl-2-pentanone	ND	µg/L	10						
Methylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	1.0						
Styrene	ND	µg/L	1.0						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.460	µg/L	0	94.6	68.1	123			
Surr: 4-Bromofluorobenzene	10.49	µg/L	0	105	53.2	145			
Surr: Dibromofluoromethane	9.672	µg/L	0	96.7	68.5	119			
Surr: Toluene-d8	10.21	µg/L	0	102	64	131			

Sample ID: 5ml rb

MBLK

Batch ID: R29824 Analysis Date: 8/18/2008 10:15:36 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29824 Analysis Date: 8/18/2008 10:15:36 AM

Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29824 Analysis Date: 8/18/2008 10:15:36 AM

1,1,2,2-Tetrachloroethane	ND	µg/L	2.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.448	µg/L	0	94.5	68.1	123			
Surr: 4-Bromofluorobenzene	10.40	µg/L	0	104	53.2	145			
Surr: Dibromofluoromethane	9.891	µg/L	0	98.9	68.5	119			
Surr: Toluene-d8	9.648	µg/L	0	96.5	64	131			

Sample ID: b7

MBLK

Batch ID: R29824 Analysis Date: 8/18/2008 9:37:52 PM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	1.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
Carbon Tetrachloride	ND	µg/L	1.0						
Chlorobenzene	ND	µg/L	1.0						
Chloroethane	ND	µg/L	2.0						
Chloroform	ND	µg/L	1.0						
Chloromethane	ND	µg/L	1.0						
2-Chlorotoluene	ND	µg/L	1.0						
4-Chlorotoluene	ND	µg/L	1.0						
cis-1,2-DCE	ND	µg/L	1.0						

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b7

MBLK

Batch ID: R29824 Analysis Date: 8/18/2008 9:37:52 PM

cis-1,3-Dichloropropene	ND	µg/L	1.0						
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0						
Dibromochloromethane	ND	µg/L	1.0						
Dibromomethane	ND	µg/L	1.0						
1,2-Dichlorobenzene	ND	µg/L	1.0						
1,3-Dichlorobenzene	ND	µg/L	1.0						
1,4-Dichlorobenzene	ND	µg/L	1.0						
Dichlorodifluoromethane	ND	µg/L	1.0						
1,1-Dichloroethane	ND	µg/L	1.0						
1,1-Dichloroethene	ND	µg/L	1.0						
1,2-Dichloropropane	ND	µg/L	1.0						
1,3-Dichloropropane	ND	µg/L	1.0						
2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	µg/L	1.0						
Hexachlorobutadiene	ND	µg/L	1.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	µg/L	1.0						
4-Isopropyltoluene	ND	µg/L	1.0						
4-Methyl-2-pentanone	ND	µg/L	10						
Ethylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	1.0						
Styrene	ND	µg/L	1.0						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.424	µg/L	0	94.2	68.1	123			
Surr: 4-Bromofluorobenzene	10.87	µg/L	0	109	53.2	145			
Surr: Dibromofluoromethane	9.412	µg/L	0	94.1	68.5	119			
Surr: Toluene-d8	9.509	µg/L	0	95.1	64	131			

Sample ID: 100ng lcs\_b

LCS

Batch ID: R29803 Analysis Date: 8/15/2008 2:41:00 PM

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260B: VOLATILES

Sample ID: 100ng lcs_b		LCS			Batch ID: R29803		Analysis Date: 8/15/2008 2:41:00 PM	
Benzene	20.15	µg/L	1.0	101	86.8	120		
Toluene	20.41	µg/L	1.0	102	64.1	127		
Chlorobenzene	22.97	µg/L	1.0	115	82.4	113		S
1,1-Dichloroethene	24.69	µg/L	1.0	123	86.5	132		
Trichloroethene (TCE)	19.38	µg/L	1.0	96.9	77.3	123		
Surr: 1,2-Dichloroethane-d4	9.330	µg/L	0	93.3	68.1	123		
Surr: 4-Bromofluorobenzene	9.792	µg/L	0	97.9	53.2	145		
Surr: Dibromofluoromethane	9.599	µg/L	0	96.0	68.5	119		
Surr: Toluene-d8	9.648	µg/L	0	96.5	64	131		

Sample ID: 100ng lcs		LCS			Batch ID: R29824		Analysis Date: 8/18/2008 11:19:55 AM	
Benzene	20.71	µg/L	1.0	104	86.8	120		
Toluene	20.33	µg/L	1.0	102	64.1	127		
Chlorobenzene	22.04	µg/L	1.0	110	82.4	113		
1,1-Dichloroethene	24.64	µg/L	1.0	123	86.5	132		
Trichloroethene (TCE)	19.74	µg/L	1.0	98.7	77.3	123		
Surr: 1,2-Dichloroethane-d4	9.319	µg/L	0	93.2	68.1	123		
Surr: 4-Bromofluorobenzene	10.14	µg/L	0	101	53.2	145		
Surr: Dibromofluoromethane	9.536	µg/L	0	95.4	68.5	119		
Surr: Toluene-d8	9.273	µg/L	0	92.7	64	131		

Sample ID: 100ng lcs		LCS			Batch ID: R29824		Analysis Date: 8/18/2008 10:35:23 PM	
Benzene	21.32	µg/L	1.0	107	86.8	120		
Toluene	18.86	µg/L	1.0	94.3	64.1	127		
Chlorobenzene	21.47	µg/L	1.0	107	82.4	113		
1,1-Dichloroethene	24.68	µg/L	1.0	123	86.5	132		
Trichloroethene (TCE)	21.02	µg/L	1.0	105	77.3	123		
Surr: 1,2-Dichloroethane-d4	9.386	µg/L	0	93.9	68.1	123		
Surr: 4-Bromofluorobenzene	10.82	µg/L	0	108	53.2	145		
Surr: Dibromofluoromethane	9.762	µg/L	0	97.6	68.5	119		
Surr: Toluene-d8	9.388	µg/L	0	93.9	64	131		

Sample ID: 0808240-01a MS		MS			Batch ID: R29803		Analysis Date: 8/15/2008 4:41:34 PM	
Benzene	21.98	µg/L	1.0	110	72.4	126		
Toluene	20.14	µg/L	1.0	101	79.2	115		
Chlorobenzene	23.21	µg/L	1.0	116	83.1	111		S
1,1-Dichloroethene	24.22	µg/L	1.0	121	81.4	122		
Trichloroethene (TCE)	21.79	µg/L	1.0	109	64.4	118		
Surr: 1,2-Dichloroethane-d4	9.216	µg/L	0	92.2	68.1	123		
Surr: 4-Bromofluorobenzene	9.940	µg/L	0	99.4	53.2	145		
Surr: Dibromofluoromethane	9.593	µg/L	0	95.9	68.5	119		
Surr: Toluene-d8	9.398	µg/L	0	94.0	64	131		

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16804

MBLK

Batch ID:

16804

Analysis Date:

8/21/2008

Acenaphthene	ND	µg/L	10
Acenaphthylene	ND	µg/L	10
Aniline	ND	µg/L	10
Anthracene	ND	µg/L	10
Azobenzene	ND	µg/L	10
Benz(a)anthracene	ND	µg/L	10
Benzo(a)pyrene	ND	µg/L	10
Benzo(b)fluoranthene	ND	µg/L	10
Benzo(g,h,i)perylene	ND	µg/L	10
Benzo(k)fluoranthene	ND	µg/L	10
Benzoic acid	ND	µg/L	20
Benzyl alcohol	ND	µg/L	10
Bis(2-chloroethoxy)methane	ND	µg/L	10
Bis(2-chloroethyl)ether	ND	µg/L	10
Bis(2-chloroisopropyl)ether	ND	µg/L	10
Bis(2-ethylhexyl)phthalate	ND	µg/L	10
4-Bromophenyl phenyl ether	ND	µg/L	10
Butyl benzyl phthalate	ND	µg/L	10
Carbazole	ND	µg/L	10
2-Chloro-3-methylphenol	ND	µg/L	10
4-Chloroaniline	ND	µg/L	10
2-Chloronaphthalene	ND	µg/L	10
2-Chlorophenol	ND	µg/L	10
4-Chlorophenyl phenyl ether	ND	µg/L	10
Chrysene	ND	µg/L	10
Di-n-butyl phthalate	ND	µg/L	10
Di-n-octyl phthalate	ND	µg/L	10
Dibenz(a,h)anthracene	ND	µg/L	10
Dibenzofuran	ND	µg/L	10
1,2-Dichlorobenzene	ND	µg/L	10
1,3-Dichlorobenzene	ND	µg/L	10
1,4-Dichlorobenzene	ND	µg/L	10
3,3'-Dichlorobenzidine	ND	µg/L	10
Diethyl phthalate	ND	µg/L	10
Dimethyl phthalate	ND	µg/L	10
2,4-Dichlorophenol	ND	µg/L	20
2,4-Dimethylphenol	ND	µg/L	10
4,6-Dinitro-2-methylphenol	ND	µg/L	20
2,4-Dinitrophenol	ND	µg/L	20
2,4-Dinitrotoluene	ND	µg/L	10
2,6-Dinitrotoluene	ND	µg/L	10
Fluoranthene	ND	µg/L	10
Fluorene	ND	µg/L	10
Hexachlorobenzene	ND	µg/L	10

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16804

MBLK

Batch ID:

16804

Analysis Date:

8/21/2008

Hexachlorobutadiene	ND	µg/L	10						
Hexachlorocyclopentadiene	ND	µg/L	10						
Hexachloroethane	ND	µg/L	10						
Indeno(1,2,3-cd)pyrene	ND	µg/L	10						
Isophorone	ND	µg/L	10						
2-Methylnaphthalene	ND	µg/L	10						
2-Methylphenol	ND	µg/L	10						
3+4-Methylphenol	ND	µg/L	10						
N-Nitrosodi-n-propylamine	ND	µg/L	10						
N-Nitrosodimethylamine	ND	µg/L	10						
N-Nitrosodiphenylamine	ND	µg/L	10						
Naphthalene	ND	µg/L	10						
2-Nitroaniline	ND	µg/L	10						
3-Nitroaniline	ND	µg/L	10						
4-Nitroaniline	ND	µg/L	10						
Nitrobenzene	ND	µg/L	10						
2-Nitrophenol	ND	µg/L	10						
4-Nitrophenol	ND	µg/L	10						
Pentachlorophenol	ND	µg/L	40						
Phenanthrene	ND	µg/L	10						
Phenol	ND	µg/L	10						
Pyrene	ND	µg/L	10						
Pyridine	ND	µg/L	10						
1,2,4-Trichlorobenzene	ND	µg/L	10						
2,4,5-Trichlorophenol	ND	µg/L	10						
2,4,6-Trichlorophenol	ND	µg/L	10						
Surr: 2,4,6-Tribromophenol	130.0	µg/L	0	65.0	16.6	150			
Surr: 2-Fluorobiphenyl	71.08	µg/L	0	71.1	19.6	134			
Surr: 2-Fluorophenol	119.1	µg/L	0	59.6	9.54	113			
Surr: 4-Terphenyl-d14	66.70	µg/L	0	66.7	22.7	145			
Surr: Nitrobenzene-d5	70.06	µg/L	0	70.1	14.6	134			
Surr: Phenol-d5	88.94	µg/L	0	44.5	10.7	80.3			

Sample ID: lcs-16804

LCS

Batch ID:

16804

Analysis Date:

8/21/2008

Acenaphthene	43.66	µg/L	10	43.7	11	123			
4-Chloro-3-methylphenol	102.0	µg/L	10	50.1	15.4	119			
2-Chlorophenol	95.42	µg/L	10	46.7	12.2	122			
1,4-Dichlorobenzene	37.00	µg/L	10	37.0	16.9	100			
2,4-Dinitrotoluene	43.10	µg/L	10	43.1	13	138			
N-Nitrosodi-n-propylamine	50.50	µg/L	10	50.5	9.93	122			
4-Nitrophenol	67.84	µg/L	10	33.9	12.5	87.4			
Pentachlorophenol	91.04	µg/L	40	45.5	3.55	114			
Phenol	70.52	µg/L	10	35.3	7.53	73.1			
Pyrene	52.60	µg/L	10	52.6	12.6	140			
1,2,4-Trichlorobenzene	38.40	µg/L	10	38.4	17.4	98.7			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8270C: Semivolatiles

Sample ID: lcs-16804		LCS			Batch ID: 16804		Analysis Date: 8/21/2008	
Surr: 2,4,6-Tribromophenol	85.24	µg/L	0	42.6	16.6	150		
Surr: 2-Fluorobiphenyl	47.88	µg/L	0	47.9	19.6	134		
Surr: 2-Fluorophenol	84.44	µg/L	0	42.2	9.54	113		
Surr: 4-Terphenyl-d14	45.86	µg/L	0	45.9	22.7	145		
Surr: Nitrobenzene-d5	49.30	µg/L	0	49.3	14.6	134		
Surr: Phenol-d5	71.26	µg/L	0	35.6	10.7	80.3		

Sample ID: lcsd-16804		LCSD			Batch ID: 16804		Analysis Date:		8/21/2008
Acenaphthene	51.78	µg/L	10	51.8	11	123	17.0	30.5	R
4-Chloro-3-methylphenol	120.8	µg/L	10	59.5	15.4	119	16.9	28.6	
2-Chlorophenol	112.9	µg/L	10	55.5	12.2	122	16.8	107	
1,4-Dichlorobenzene	42.48	µg/L	10	42.5	16.9	100	13.8	62.1	
2,4-Dinitrotoluene	50.30	µg/L	10	50.3	13	138	15.4	14.7	
N-Nitrosodi-n-propylamine	58.30	µg/L	10	58.3	9.93	122	14.3	30.3	
4-Nitrophenol	92.10	µg/L	10	46.0	12.5	87.4	30.3	36.3	
Pentachlorophenol	103.7	µg/L	40	51.9	3.55	114	13.0	49	
Phenol	90.88	µg/L	10	45.4	7.53	73.1	25.2	52.4	
Pyrene	60.08	µg/L	10	60.1	12.6	140	13.3	16.3	
1,2,4-Trichlorobenzene	45.64	µg/L	10	45.6	17.4	98.7	17.2	36.4	
Surr: 2,4,6-Tribromophenol	97.70	µg/L	0	48.9	16.6	150	0	0	
Surr: 2-Fluorobiphenyl	55.80	µg/L	0	55.8	19.6	134	0	0	
Surr: 2-Fluorophenol	102.9	µg/L	0	51.5	9.54	113	0	0	
Surr: 4-Terphenyl-d14	50.72	µg/L	0	50.7	22.7	145	0	0	
Surr: Nitrobenzene-d5	56.00	µg/L	0	56.0	14.6	134	0	0	
Surr: Phenol-d5	90.52	µg/L	0	45.3	10.7	80.3	0	0	

## Method: EPA Method 7470: Mercury

Sample ID: 0808240-02DMSD				MSD		Batch ID: 16906		Analysis Date: 8/27/2008 4:26:04 PM	
Mercury	0.005082	mg/L	0.0010	98.2	75	125	0.175	20	
Sample ID: 0808240-02DMS				MS		Batch ID: 16906		Analysis Date: 8/27/2008 4:20:34 PM	
Mercury	0.005090	mg/L	0.0010	98.4	75	125			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 6010B: Dissolved Metals

Sample ID: MB MBLK Batch ID: R29998 Analysis Date: 8/29/2008 1:18:16 PM

Arsenic	ND	mg/L	0.020
Barium	ND	mg/L	0.020
Cadmium	ND	mg/L	0.0020
Chromium	ND	mg/L	0.0060
Copper	ND	mg/L	0.0060
Iron	ND	mg/L	0.020
Lead	ND	mg/L	0.0050
Manganese	ND	mg/L	0.0020
Selenium	ND	mg/L	0.050
Silver	ND	mg/L	0.0050
Zinc	ND	mg/L	0.050

Sample ID: MB MBLK Batch ID: R29998 Analysis Date: 8/29/2008 3:30:02 PM

Arsenic	ND	mg/L	0.020
Barium	ND	mg/L	0.020
Cadmium	ND	mg/L	0.0020
Chromium	ND	mg/L	0.0060
Copper	ND	mg/L	0.0060
Iron	ND	mg/L	0.020
Lead	ND	mg/L	0.0050
Manganese	ND	mg/L	0.0020
Selenium	ND	mg/L	0.050
Silver	ND	mg/L	0.0050

Sample ID: MB MBLK Batch ID: R30124 Analysis Date: 9/8/2008 9:44:53 PM

Selenium ND mg/L 0.050

Sample ID: LCS LCS Batch ID: R29998 Analysis Date: 8/29/2008 1:21:07 PM

Arsenic	0.5042	mg/L	0.020	101	80	120
Barium	0.5032	mg/L	0.020	101	80	120
Cadmium	0.5164	mg/L	0.0020	103	80	120
Chromium	0.5062	mg/L	0.0060	101	80	120
Copper	0.4904	mg/L	0.0060	98.1	80	120
Iron	0.5268	mg/L	0.020	105	80	120
Lead	0.5188	mg/L	0.0050	104	80	120
Manganese	0.5008	mg/L	0.0020	100	80	120
Selenium	0.5137	mg/L	0.050	103	80	120
Silver	0.5081	mg/L	0.0050	102	80	120
Zinc	0.5096	mg/L	0.050	102	80	120

Sample ID: LCS LCS Batch ID: R29998 Analysis Date: 8/29/2008 3:32:53 PM

Arsenic	0.5219	mg/L	0.020	104	80	120
Barium	0.5196	mg/L	0.020	104	80	120
Cadmium	0.5339	mg/L	0.0020	107	80	120
Chromium	0.5264	mg/L	0.0060	105	80	120
Copper	0.5107	mg/L	0.0060	102	80	120
Iron	0.5102	mg/L	0.020	102	80	120

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: Cross-Gradient Wells Annual Aug 2008

Work Order: 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 6010B: Dissolved Metals</b>									
<b>Sample ID: LCS</b>		LCS			Batch ID: R29998	Analysis Date: 8/29/2008 3:32:53 PM			
Lead	0.5421	mg/L	0.0050	108	80	120			
Manganese	0.5171	mg/L	0.0020	103	80	120			
Selenium	0.5360	mg/L	0.050	107	80	120			
Silver	0.5257	mg/L	0.0050	105	80	120			
<b>Sample ID: LCS</b>		LCS			Batch ID: R30124	Analysis Date: 9/8/2008 9:47:18 PM			
Selenium	0.5051	mg/L	0.050	101	80	120			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

**Client:** Western Refining Southwest, Inc.  
**Project:** Cross-Gradient Wells Annual Aug 2008

**Work Order:** 0808240

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA 6010B: Total Recoverable Metals</b>									
<b>Sample ID: 0808240-04DMSD</b>		<i>MSD</i>							
					Batch ID: 16876	Analysis Date: 8/28/2008 12:14:03 PM			
Barium	0.4940	mg/L	0.010	93.5	75	125	0.434	20	
Silver	0.5029	mg/L	0.0050	101	75	125	0.799	20	
<b>Sample ID: MB-16876</b>		<i>MBLK</i>							
					Batch ID: 16876	Analysis Date: 8/28/2008 11:55:26 AM			
Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.010						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						
<b>Sample ID: MB-16876</b>		<i>MBLK</i>							
					Batch ID: 16876	Analysis Date: 9/2/2008 10:17:34 AM			
Barium	ND	mg/L	0.010						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Silver	ND	mg/L	0.0050						
<b>Sample ID: MB-16876</b>		<i>MBLK</i>							
					Batch ID: 16876	Analysis Date: 9/2/2008 12:52:59 PM			
Arsenic	ND	mg/L	0.020						
Selenium	ND	mg/L	0.050						
<b>Sample ID: LCS-16876</b>		<i>LCS</i>							
					Batch ID: 16876	Analysis Date: 8/28/2008 11:57:19 AM			
Arsenic	0.4914	mg/L	0.020	98.3	80	120			
Barium	0.4796	mg/L	0.010	95.9	80	120			
Cadmium	0.4924	mg/L	0.0020	98.5	80	120			
Chromium	0.4942	mg/L	0.0060	98.8	80	120			
Lead	0.4785	mg/L	0.0050	95.0	80	120			
Selenium	0.4934	mg/L	0.050	98.7	80	120			
Silver	0.4969	mg/L	0.0050	99.4	80	120			
<b>Sample ID: LCS-16876</b>		<i>LCS</i>							
					Batch ID: 16876	Analysis Date: 9/2/2008 10:19:54 AM			
Barium	0.4752	mg/L	0.010	95.0	80	120			
Cadmium	0.4758	mg/L	0.0020	95.2	80	120			
Chromium	0.4812	mg/L	0.0060	96.2	80	120			
Lead	0.4736	mg/L	0.0050	94.7	80	120			
Silver	0.4784	mg/L	0.0050	95.7	80	120			
<b>Sample ID: LCS-16876</b>		<i>LCS</i>							
					Batch ID: 16876	Analysis Date: 9/2/2008 12:55:29 PM			
Arsenic	0.4782	mg/L	0.020	95.6	80	120			
Selenium	0.4710	mg/L	0.050	94.2	80	120			
<b>Sample ID: 0808240-04DMS</b>		<i>MS</i>							
					Batch ID: 16876	Analysis Date: 8/28/2008 12:11:35 PM			
Barium	0.4961	mg/L	0.010	93.9	75	125			
Silver	0.5070	mg/L	0.0050	101	75	125			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

080815 024 **HALLE** 8/13/2008 1st RCVD 8/15/2008  
 Last Due

# CHAN-OF-CUSTON

Hall Environmental Analysis Laboratory, Inc.  
 4901 Hawkins NE, Suite D  
 Albuquerque, New Mexico 87109-4372

TEL: 5053453975 FAX: 5053454107

**Subcontractor:**

Anatek Labs, Inc.  
 1282 Alturas Dr  
 Moscow, ID 83843

TEL: (208) 883-2839  
 FAX: (208) 882-9246  
 Acct #:

Project Name: 0808240

14-Aug-08

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0808240-01F	MW-1	Aqueous	8/13/2008 8:00:00 AM	125HDPHNO3	SEE BELOW
0808240-02F	MW-13	Aqueous	8/13/2008 8:50:00 AM	125HDPHNO3	SEE BELOW
0808240-03F	MW-26	Aqueous	8/13/2008 9:15:00 AM	125HDPHNO3	SEE BELOW
0808240-04F	MW-27	Aqueous	8/13/2008 10:30:00 AM	125HDPHNO3	SEE BELOW
0808240-05F	MW-31	Aqueous	8/13/2008 10:00:00 AM	125HDPHNO3	SEE BELOW
0808240-06F	MW-32	Aqueous	8/13/2008 11:30:00 AM	125HDPHNO3	SEE BELOW
0808240-07F	MW-33	Aqueous	8/13/2008 10:55:00 AM	125HDPHNO3	SEE BELOW
0808240-08F	MW-26 FD	Aqueous	8/13/2008 9:20:00 AM	125HDPHNO3	SEE BELOW

WWRBS

**ANALYTICAL COMMENTS:** LEVEL 4 QA/QC FOR DISSOLVED U BY 6020, PLEASE REPORT @ 0.001 mg/L

Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

**ANATEK LABS RECEIVING LIST**

RECEIVED INTACT ☒ LABELS & CHAINS AGREE ☒ NO HEADSPACE ☒ PRESERVATIVE: 4/003 SHIPPED VIA: FedEx INSPECTED BY: MA

TEMP: 4.1 °C

NUMBER OF CONTAINERS: 5

DATE & TIME: 8-15-08

Relinquished by: Clare Date/Time: 8/14/08 R# 1000

Relinquished by: \_\_\_\_\_ R# \_\_\_\_\_



# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

## Login Report

Customer Name: HALL ENVIRONMENTAL ANALYSIS LAB

Order ID: 080815024

Purchase Order:

Order Date: 8/15/2008

Project ID:

Project Name: 0808240

Comment:

Sample #:	080815024-001	Customer Sample #:	0808240-01F / MW-1	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/13/2008
Quantity:	1	Matrix:	Water	Date Received:	8/15/2008 10:45:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	8/27/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080815024-002	Customer Sample #:	0808240-02F / MW-13	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/13/2008
Quantity:	1	Matrix:	Water	Date Received:	8/15/2008 10:45:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	8/27/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080815024-003	Customer Sample #:	0808240-03F / MW-26	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/13/2008
Quantity:	1	Matrix:	Water	Date Received:	8/15/2008 10:45:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	8/27/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080815024-004	Customer Sample #:	0808240-04F / MW-27	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/13/2008
Quantity:	1	Matrix:	Water	Date Received:	8/15/2008 10:45:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	8/27/2008	<u>Normal (6-10 Days)</u>	

Customer Name: HALL ENVIRONMENTAL ANALYSIS LAB

Order ID: 080815024

Purchase Order:

Order Date: 8/15/2008

Project ID:

Project Name: 0808240

Comment:

Sample #: 080815024-005 Customer Sample #: 0808240-05F / MW-31 Site:

Recv'd: ☒ Collector: Date Collected: 8/13/2008  
Quantity: 1 Matrix: Water Date Received: 8/15/2008 10:45:00 A

Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/27/2008	<u>Normal (6-10 Days)</u>

Sample #: 080815024-006 Customer Sample #: 0808240-06F / MW-32 Site:

Recv'd: ☒ Collector: Date Collected: 8/13/2008  
Quantity: 1 Matrix: Water Date Received: 8/15/2008 10:45:00 A

Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/27/2008	<u>Normal (6-10 Days)</u>

Sample #: 080815024-007 Customer Sample #: 0808240-07F / MW-33 Site:

Recv'd: ☒ Collector: Date Collected: 8/13/2008  
Quantity: 1 Matrix: Water Date Received: 8/15/2008 10:45:00 A

Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/27/2008	<u>Normal (6-10 Days)</u>

Sample #: 080815024-008 Customer Sample #: 0808240-08F / MW-26 FD Site:

Recv'd: ☒ Collector: Date Collected: 8/13/2008  
Quantity: 1 Matrix: Water Date Received: 8/15/2008 10:45:00 A

Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/27/2008	<u>Normal (6-10 Days)</u>

### SAMPLE CONDITION RECORD

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature inside the cooler?	4.1
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	N/A
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/14/2008

Work Order Number 0808240

Received by: TLS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Container/Temp Blank temperature?

4°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_







# Chain-of-Custody Record

Client: Western Refining (Bimfld)

Address: 4990 ~~150~~ #50

Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Cross-Gradient Wells

Annual Aug. 2008

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTX + MTBE + TMBs (8021)	BTX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Dissolved Metals	TOTAL Recoverable Metals	CO <sub>2</sub> , ALKALINITY	Air Bubbles (Y or N)
8/13/08	1055A	MW-33	6-VOA	HCl	0808240			X							X					
			Amber		-7															
			250ml	HNO <sub>3</sub>	-7															
			500ml	HNO <sub>3</sub>	-7															
			250ml	H <sub>2</sub> SO <sub>4</sub>	-7															
			500 ml		-7															
8/13/08	920A	MW#26 FD	6-VOA		-8			X							X					
			Amber		-8															
			250ml	HNO <sub>3</sub>	-8															
			500ml	HNO <sub>3</sub>	-8															
			250ml	H <sub>2</sub> SO <sub>4</sub>	-8															
			500ml		-8															
Date:	Time:	Relinquished by:	Received by:	Remarks:																
8/13/08	231pm	Cindy Hurtado		Trip Bank - 9																
Date:	Time:	Relinquished by:	Received by:																	



## COVER LETTER

Tuesday, September 23, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX: (505) 632-3911

RE: Refinery Wells - Annual 2008

Order No.: 0808297

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 8/19/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX





**Hall Environmental Analysis Laboratory, Inc.**

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Refinery Wells - Annual 2008  
**Lab Order:** 0808297

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808297-01A	MW #8	R29898	EPA Method 8260B: VOLATILES	8/18/2008 10:30:00 AM
0808297-01A	MW #8	R29968	EPA Method 8260B: VOLATILES	8/18/2008 10:30:00 AM
0808297-01A	MW #8	R29989	EPA Method 8015B: Gasoline Range	8/18/2008 10:30:00 AM
0808297-01A	MW #8	16847	EPA Method 8015B: Diesel Range	8/18/2008 10:30:00 AM
0808297-01B	MW #8	16839	EPA Method 8270C: Semivolatiles	8/18/2008 10:30:00 AM
0808297-01C	MW #8	R29848	EPA Method 300.0: Anions	8/18/2008 10:30:00 AM
0808297-01C	MW #8	R29848	EPA Method 300.0: Anions	8/18/2008 10:30:00 AM
0808297-01C	MW #8	R29857	EPA Method 300.0: Anions	8/18/2008 10:30:00 AM
0808297-01C	MW #8	R29883	SM 2320B: Alkalinity	8/18/2008 10:30:00 AM
0808297-01C	MW #8	R29886	Carbon Dioxide	8/18/2008 10:30:00 AM
0808297-01D	MW #8	16942	EPA Method 7470: Mercury	8/18/2008 10:30:00 AM
0808297-01D	MW #8	16920	EPA 6010B: Total Recoverable Metals	8/18/2008 10:30:00 AM
0808297-01D	MW #8	16920	EPA 6010B: Total Recoverable Metals	8/18/2008 10:30:00 AM
0808297-01E	MW #8	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 10:30:00 AM
0808297-01E	MW #8	R	EPA Method 6010B: Dissolved Metals	8/18/2008 10:30:00 AM
0808297-02A	MW #29	16847	EPA Method 8015B: Diesel Range	8/18/2008 11:10:00 AM
0808297-02A	MW #29	R29898	EPA Method 8260B: VOLATILES	8/18/2008 11:10:00 AM
0808297-02A	MW #29	R29968	EPA Method 8260B: VOLATILES	8/18/2008 11:10:00 AM
0808297-02A	MW #29	R29989	EPA Method 8015B: Gasoline Range	8/18/2008 11:10:00 AM
0808297-02B	MW #29	16839	EPA Method 8270C: Semivolatiles	8/18/2008 11:10:00 AM
0808297-02C	MW #29	R29886	Carbon Dioxide	8/18/2008 11:10:00 AM
0808297-02C	MW #29	R29883	SM 2320B: Alkalinity	8/18/2008 11:10:00 AM
0808297-02C	MW #29	R29848	EPA Method 300.0: Anions	8/18/2008 11:10:00 AM
0808297-02C	MW #29	R29848	EPA Method 300.0: Anions	8/18/2008 11:10:00 AM
0808297-02D	MW #29	16920	EPA 6010B: Total Recoverable Metals	8/18/2008 11:10:00 AM
0808297-02D	MW #29	16942	EPA Method 7470: Mercury	8/18/2008 11:10:00 AM
0808297-02E	MW #29	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 11:10:00 AM
0808297-02E	MW #29	R	EPA Method 6010B: Dissolved Metals	8/18/2008 11:10:00 AM
0808297-03A	Field Blank	R29898	EPA Method 8260B: VOLATILES	8/18/2008 12:20:00 PM
0808297-03A	Field Blank	R29968	EPA Method 8260B: VOLATILES	8/18/2008 12:20:00 PM
0808297-04A	MW #30	R29989	EPA Method 8015B: Gasoline Range	8/18/2008 12:30:00 PM
0808297-04A	MW #30	R29898	EPA Method 8260B: VOLATILES	8/18/2008 12:30:00 PM
0808297-04A	MW #30	16847	EPA Method 8015B: Diesel Range	8/18/2008 12:30:00 PM
0808297-04A	MW #30	R29968	EPA Method 8260B: VOLATILES	8/18/2008 12:30:00 PM
0808297-04B	MW #30	16839	EPA Method 8270C: Semivolatiles	8/18/2008 12:30:00 PM
0808297-04B	MW #30	16839	EPA Method 8270C: Semivolatiles	8/18/2008 12:30:00 PM
0808297-04C	MW #30	R29848	EPA Method 300.0: Anions	8/18/2008 12:30:00 PM
0808297-04C	MW #30	R29848	EPA Method 300.0: Anions	8/18/2008 12:30:00 PM

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Refinery Wells - Annual 2008  
**Lab Order:** 0808297

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808297-04C	MW #30	R29883	SM 2320B: Alkalinity	8/18/2008 12:30:00 PM
0808297-04C	MW #30	R29886	Carbon Dioxide	8/18/2008 12:30:00 PM
0808297-04D	MW #30	16942	EPA Method 7470: Mercury	8/18/2008 12:30:00 PM
0808297-04D	MW #30	16920	EPA 6010B: Total Recoverable Metals	8/18/2008 12:30:00 PM
0808297-04E	MW #30	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 12:30:00 PM
0808297-04E	MW #30	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 12:30:00 PM
0808297-05A	RW #1	R29989	EPA Method 8015B: Gasoline Range	8/18/2008 9:15:00 AM
0808297-05A	RW #1	16847	EPA Method 8015B: Diesel Range	8/18/2008 9:15:00 AM
0808297-05A	RW #1	R29898	EPA Method 8260B: VOLATILES	8/18/2008 9:15:00 AM
0808297-05A	RW #1	R29944	EPA Method 8260B: VOLATILES	8/18/2008 9:15:00 AM
0808297-05A	RW #1	R29944	EPA Method 8260B: VOLATILES	8/18/2008 9:15:00 AM
0808297-05B	RW #1	16839	EPA Method 8270C: Semivolatiles	8/18/2008 9:15:00 AM
0808297-05B	RW #1	16839	EPA Method 8270C: Semivolatiles	8/18/2008 9:15:00 AM
0808297-05C	RW #1	R29848	EPA Method 300.0: Anions	8/18/2008 9:15:00 AM
0808297-05C	RW #1	R29848	EPA Method 300.0: Anions	8/18/2008 9:15:00 AM
0808297-05C	RW #1	R29883	SM 2320B: Alkalinity	8/18/2008 9:15:00 AM
0808297-05C	RW #1	R29886	Carbon Dioxide	8/18/2008 9:15:00 AM
0808297-05D	RW #1	16942	EPA Method 7470: Mercury	8/18/2008 9:15:00 AM
0808297-05D	RW #1	16920	EPA 6010B: Total Recoverable Metals	8/18/2008 9:15:00 AM
0808297-05D	RW #1	16920	EPA 6010B: Total Recoverable Metals	8/18/2008 9:15:00 AM
0808297-05E	RW #1	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 9:15:00 AM
0808297-05E	RW #1	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 9:15:00 AM
0808297-06A	RW #1 FD	16847	EPA Method 8015B: Diesel Range	8/18/2008 9:25:00 AM
0808297-06A	RW #1 FD	R29944	EPA Method 8260B: VOLATILES	8/18/2008 9:25:00 AM
0808297-06A	RW #1 FD	R29944	EPA Method 8260B: VOLATILES	8/18/2008 9:25:00 AM
0808297-06A	RW #1 FD	R29989	EPA Method 8015B: Gasoline Range	8/18/2008 9:25:00 AM
0808297-06A	RW #1 FD	R29898	EPA Method 8260B: VOLATILES	8/18/2008 9:25:00 AM
0808297-06B	RW #1 FD	16839	EPA Method 8270C: Semivolatiles	8/18/2008 9:25:00 AM
0808297-06B	RW #1 FD	16839	EPA Method 8270C: Semivolatiles	8/18/2008 9:25:00 AM
0808297-06C	RW #1 FD	R29886	Carbon Dioxide	8/18/2008 9:25:00 AM
0808297-06C	RW #1 FD	R29848	EPA Method 300.0: Anions	8/18/2008 9:25:00 AM
0808297-06C	RW #1 FD	R29848	EPA Method 300.0: Anions	8/18/2008 9:25:00 AM
0808297-06C	RW #1 FD	R29883	SM 2320B: Alkalinity	8/18/2008 9:25:00 AM
0808297-06D	RW #1 FD	16920	EPA 6010B: Total Recoverable Metals	8/18/2008 9:25:00 AM
0808297-06D	RW #1 FD	16942	EPA Method 7470: Mercury	8/18/2008 9:25:00 AM
0808297-06D	RW #1 FD	16920	EPA 6010B: Total Recoverable Metals	8/18/2008 9:25:00 AM
0808297-06E	RW #1 FD	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 9:25:00 AM
0808297-06E	RW #1 FD	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 9:25:00 AM
0808297-06E	RW #1 FD	R	EPA Method 6010B: Dissolved Metals	8/18/2008 9:25:00 AM
0808297-07A	MW #4	16847	EPA Method 8015B: Diesel Range	8/18/2008 9:50:00 AM

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Refinery Wells - Annual 2008  
**Lab Order:** 0808297

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808297-07A	MW #4	R29898	EPA Method 8260B: VOLATILES	8/18/2008 9:50:00 AM
0808297-07A	MW #4	R29944	EPA Method 8260B: VOLATILES	8/18/2008 9:50:00 AM
0808297-07A	MW #4	R29989	EPA Method 8015B: Gasoline Range	8/18/2008 9:50:00 AM
0808297-07B	MW #4	16839	EPA Method 8270C: Semivolatiles	8/18/2008 9:50:00 AM
0808297-07B	MW #4	16839	EPA Method 8270C: Semivolatiles	8/18/2008 9:50:00 AM
0808297-07C	MW #4	R29886	Carbon Dioxide	8/18/2008 9:50:00 AM
0808297-07C	MW #4	R29883	SM 2320B: Alkalinity	8/18/2008 9:50:00 AM
0808297-07C	MW #4	R29848	EPA Method 300.0: Anions	8/18/2008 9:50:00 AM
0808297-07C	MW #4	R29848	EPA Method 300.0: Anions	8/18/2008 9:50:00 AM
0808297-07D	MW #4	16942	EPA Method 7470: Mercury	8/18/2008 9:50:00 AM
0808297-07D	MW #4	16920	EPA 6010B: Total Recoverable Metals	8/18/2008 9:50:00 AM
0808297-07D	MW #4	16920	EPA 6010B: Total Recoverable Metals	8/18/2008 9:50:00 AM
0808297-07E	MW #4	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 9:50:00 AM
0808297-07E	MW #4	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 9:50:00 AM
0808297-07E	MW #4	R30090	EPA Method 6010B: Dissolved Metals	8/18/2008 9:50:00 AM
0808297-08A	TRIP BLANK	R29989	EPA Method 8015B: Gasoline Range	
0808297-08A	TRIP BLANK	R29898	EPA Method 8260B: VOLATILES	

**Hall Environmental Analysis Laboratory, Inc.**

Date: 25-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Refinery Wells - Annual 2008  
**Lab Order:** 0808297

**CASE NARRATIVE**

Analytical Comments for SAMPLES RW #1 and its field duplicate: Samples contained free floating product. Surrogate for DRO was not recovered.

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-01

**Client Sample ID:** MW #8  
**Collection Date:** 8/18/2008 10:30:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.69	0.10		mg/L	1	8/19/2008 8:58:25 PM
Chloride	180	1.0		mg/L	10	8/19/2008 9:15:50 PM
Nitrogen, Nitrite (As N)	0.12	0.10		mg/L	1	8/19/2008 8:58:25 PM
Bromide	1.6	0.10		mg/L	1	8/19/2008 8:58:25 PM
Nitrogen, Nitrate (As N)	24	1.0		mg/L	10	8/19/2008 9:15:50 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2008 8:58:25 PM
Sulfate	790	10		mg/L	20	8/20/2008 9:44:28 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-01

**Client Sample ID:** MW #8  
**Collection Date:** 8/18/2008 10:30:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/21/2008 8:40:17 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/21/2008 8:40:17 PM
Surr: DNOP	133	58-140		%REC	1	8/21/2008 8:40:17 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/28/2008 12:43:53 PM
Surr: BFB	88.5	79.2-121		%REC	1	8/28/2008 12:43:53 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.69	0.10		mg/L	1	8/19/2008 8:58:25 PM
Chloride	180	1.0		mg/L	10	8/19/2008 9:15:50 PM
Nitrogen, Nitrite (As N)	0.12	0.10		mg/L	1	8/19/2008 8:58:25 PM
Nitrogen, Nitrate (As N)	24	1.0		mg/L	10	8/19/2008 9:15:50 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2008 8:58:25 PM
Sulfate	790	10		mg/L	20	8/20/2008 9:44:28 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	9/2/2008 2:04:15 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/5/2008 11:46:54 AM
Barium	ND	0.020		mg/L	1	9/5/2008 11:46:54 AM
Cadmium	ND	0.0020		mg/L	1	9/5/2008 11:46:54 AM
Chromium	0.0071	0.0060		mg/L	1	9/5/2008 11:46:54 AM
Copper	ND	0.0060		mg/L	1	9/5/2008 11:46:54 AM
Iron	0.082	0.020		mg/L	1	9/5/2008 11:46:54 AM
Lead	ND	0.0050		mg/L	1	9/5/2008 11:46:54 AM
Manganese	0.027	0.0020		mg/L	1	9/5/2008 11:46:54 AM
Selenium	ND	0.25		mg/L	5	9/8/2008 1:07:42 PM
Silver	ND	0.025		mg/L	5	9/8/2008 1:07:42 PM
Silver	ND	0.0050		mg/L	1	9/5/2008 11:46:54 AM
Zinc	0.096	0.050		mg/L	1	9/5/2008 11:46:54 AM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/3/2008 2:10:23 PM
Barium	0.030	0.020		mg/L	1	9/3/2008 2:10:23 PM
Cadmium	ND	0.0020		mg/L	1	9/3/2008 2:10:23 PM
Chromium	0.32	0.0060		mg/L	1	9/3/2008 2:10:23 PM
Lead	ND	0.0050		mg/L	1	9/3/2008 2:10:23 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 1:05:09 PM
Silver	ND	0.0050		mg/L	1	9/3/2008 2:10:23 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-01

**Client Sample ID:** MW #8  
**Collection Date:** 8/18/2008 10:30:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/24/2008
Acenaphthylene	ND	10		µg/L	1	8/24/2008
Aniline	ND	10		µg/L	1	8/24/2008
Anthracene	ND	10		µg/L	1	8/24/2008
Azobenzene	ND	10		µg/L	1	8/24/2008
Benz(a)anthracene	ND	10		µg/L	1	8/24/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/24/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/24/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzoic acid	ND	20		µg/L	1	8/24/2008
Benzyl alcohol	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/24/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/24/2008
Carbazole	ND	10		µg/L	1	8/24/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/24/2008
4-Chloroaniline	ND	10		µg/L	1	8/24/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/24/2008
2-Chlorophenol	ND	10		µg/L	1	8/24/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Chrysene	ND	10		µg/L	1	8/24/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/24/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/24/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/24/2008
Dibenzofuran	ND	10		µg/L	1	8/24/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/24/2008
Diethyl phthalate	ND	10		µg/L	1	8/24/2008
Dimethyl phthalate	ND	10		µg/L	1	8/24/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/24/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/24/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
Fluoranthene	ND	10		µg/L	1	8/24/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-01

Client Sample ID: MW #8  
Collection Date: 8/18/2008 10:30:00 AM  
Date Received: 8/19/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/24/2008
Hexachlorobenzene	ND	10		µg/L	1	8/24/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/24/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/24/2008
Hexachloroethane	ND	10		µg/L	1	8/24/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/24/2008
Isophorone	ND	10		µg/L	1	8/24/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/24/2008
2-Methylphenol	ND	10		µg/L	1	8/24/2008
3+4-Methylphenol	ND	10		µg/L	1	8/24/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/24/2008
Naphthalene	ND	10		µg/L	1	8/24/2008
2-Nitroaniline	ND	10		µg/L	1	8/24/2008
3-Nitroaniline	ND	10		µg/L	1	8/24/2008
4-Nitroaniline	ND	10		µg/L	1	8/24/2008
Nitrobenzene	ND	10		µg/L	1	8/24/2008
2-Nitrophenol	ND	10		µg/L	1	8/24/2008
4-Nitrophenol	ND	10		µg/L	1	8/24/2008
Pentachlorophenol	ND	40		µg/L	1	8/24/2008
Phenanthrene	ND	10		µg/L	1	8/24/2008
Phenol	ND	10		µg/L	1	8/24/2008
Pyrene	ND	10		µg/L	1	8/24/2008
Pyridine	ND	10		µg/L	1	8/24/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/24/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/24/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/24/2008
Surr: 2,4,6-Tribromophenol	24.4	16.6-150		%REC	1	8/24/2008
Surr: 2-Fluorobiphenyl	83.8	19.6-134		%REC	1	8/24/2008
Surr: 2-Fluorophenol	27.2	9.54-113		%REC	1	8/24/2008
Surr: 4-Terphenyl-d14	72.6	22.7-145		%REC	1	8/24/2008
Surr: Nitrobenzene-d5	76.2	14.6-134		%REC	1	8/24/2008
Surr: Phenol-d5	40.7	10.7-80.3		%REC	1	8/24/2008
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Toluene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Ethylbenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-01

Client Sample ID: MW #8  
Collection Date: 8/18/2008 10:30:00 AM  
Date Received: 8/19/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Naphthalene	ND	2.0		µg/L	1	8/22/2008 11:05:14 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 11:05:14 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 11:05:14 AM
Acetone	ND	10		µg/L	1	8/22/2008 11:05:14 AM
Bromobenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Bromodichloromethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Bromoform	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Bromomethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
2-Butanone	ND	10		µg/L	1	8/22/2008 11:05:14 AM
Carbon disulfide	ND	10		µg/L	1	8/22/2008 11:05:14 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Chlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Chloroethane	ND	2.0		µg/L	1	8/22/2008 11:05:14 AM
Chloroform	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Chloromethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2008 11:05:14 AM
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Dibromomethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/22/2008 11:05:14 AM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
2-Hexanone	ND	10		µg/L	1	8/22/2008 11:05:14 AM
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2008 11:05:14 AM
Methylene Chloride	ND	3.0		µg/L	1	8/22/2008 11:05:14 AM
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-01

**Client Sample ID:** MW #8  
**Collection Date:** 8/18/2008 10:30:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Styrene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/22/2008 11:05:14 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/27/2008 3:36:29 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2008 11:05:14 AM
Vinyl chloride	ND	1.0		µg/L	1	8/22/2008 11:05:14 AM
Xylenes, Total	ND	1.5		µg/L	1	8/22/2008 11:05:14 AM
Surr: 1,2-Dichloroethane-d4	90.4	68.1-123		%REC	1	8/22/2008 11:05:14 AM
Surr: 4-Bromofluorobenzene	93.4	53.2-145		%REC	1	8/22/2008 11:05:14 AM
Surr: Dibromofluoromethane	94.4	68.5-119		%REC	1	8/22/2008 11:05:14 AM
Surr: Toluene-d8	97.0	64-131		%REC	1	8/22/2008 11:05:14 AM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	230	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	230	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	220	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-02

**Client Sample ID:** MW #29  
**Collection Date:** 8/18/2008 11:10:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.36	0.10		mg/L	1	8/19/2008 9:33:15 PM
Chloride	57	1.0		mg/L	10	8/19/2008 9:50:39 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2008 9:33:15 PM
Bromide	0.40	0.10		mg/L	1	8/19/2008 9:33:15 PM
Nitrogen, Nitrate (As N)	0.99	0.10		mg/L	1	8/19/2008 9:33:15 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2008 9:33:15 PM
Sulfate	160	5.0		mg/L	10	8/19/2008 9:50:39 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808297  
 Project: Refinery Wells - Annual 2008  
 Lab ID: 0808297-02

Client Sample ID: MW #29  
 Collection Date: 8/18/2008 11:10:00 AM  
 Date Received: 8/19/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/21/2008 9:14:22 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/21/2008 9:14:22 PM
Surr: DNOP	138	58-140		%REC	1	8/21/2008 9:14:22 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/28/2008 1:14:14 PM
Surr: BFB	79.7	79.2-121		%REC	1	8/28/2008 1:14:14 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.36	0.10		mg/L	1	8/19/2008 9:33:15 PM
Chloride	57	1.0		mg/L	10	8/19/2008 9:50:39 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2008 9:33:15 PM
Nitrogen, Nitrate (As N)	0.99	0.10		mg/L	1	8/19/2008 9:33:15 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2008 9:33:15 PM
Sulfate	160	5.0		mg/L	10	8/19/2008 9:50:39 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	9/2/2008 2:06:01 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/5/2008 11:51:06 AM
Barium	ND	0.020		mg/L	1	9/5/2008 11:51:06 AM
Cadmium	ND	0.0020		mg/L	1	9/5/2008 11:51:06 AM
Chromium	ND	0.0060		mg/L	1	9/5/2008 11:51:06 AM
Copper	ND	0.0060		mg/L	1	9/5/2008 11:51:06 AM
Iron	ND	0.020		mg/L	1	9/5/2008 11:51:06 AM
Lead	ND	0.0050		mg/L	1	9/5/2008 11:51:06 AM
Manganese	0.97	0.0020		mg/L	1	9/5/2008 11:51:06 AM
Selenium	ND	0.25		mg/L	5	9/8/2008 1:09:37 PM
Silver	ND	0.0050		mg/L	1	9/5/2008 11:51:06 AM
Zinc	0.059	0.050		mg/L	1	9/5/2008 11:51:06 AM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/3/2008 2:14:10 PM
Barium	0.072	0.020		mg/L	1	9/3/2008 2:14:10 PM
Cadmium	ND	0.0020		mg/L	1	9/3/2008 2:14:10 PM
Chromium	ND	0.0060		mg/L	1	9/3/2008 2:14:10 PM
Lead	ND	0.0050		mg/L	1	9/3/2008 2:14:10 PM
Selenium	ND	0.050		mg/L	1	9/3/2008 2:14:10 PM
Silver	ND	0.0050		mg/L	1	9/3/2008 2:14:10 PM

## EPA METHOD 8270C: SEMIVOLATILES

Analyst: JDC

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-02

Client Sample ID: MW #29  
Collection Date: 8/18/2008 11:10:00 AM  
Date Received: 8/19/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/24/2008
Acenaphthylene	ND	10		µg/L	1	8/24/2008
Aniline	ND	10		µg/L	1	8/24/2008
Anthracene	ND	10		µg/L	1	8/24/2008
Azobenzene	ND	10		µg/L	1	8/24/2008
Benz(a)anthracene	ND	10		µg/L	1	8/24/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/24/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/24/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzoic acid	ND	20		µg/L	1	8/24/2008
Benzyl alcohol	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/24/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/24/2008
Carbazole	ND	10		µg/L	1	8/24/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/24/2008
4-Chloroaniline	ND	10		µg/L	1	8/24/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/24/2008
2-Chlorophenol	ND	10		µg/L	1	8/24/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Chrysene	ND	10		µg/L	1	8/24/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/24/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/24/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/24/2008
Dibenzofuran	ND	10		µg/L	1	8/24/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/24/2008
Diethyl phthalate	ND	10		µg/L	1	8/24/2008
Dimethyl phthalate	ND	10		µg/L	1	8/24/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/24/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/24/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
Fluoranthene	ND	10		µg/L	1	8/24/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW #29

Lab Order: 0808297

Collection Date: 8/18/2008 11:10:00 AM

Project: Refinery Wells - Annual 2008

Date Received: 8/19/2008

Lab ID: 0808297-02

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/24/2008
Hexachlorobenzene	ND	10		µg/L	1	8/24/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/24/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/24/2008
Hexachloroethane	ND	10		µg/L	1	8/24/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/24/2008
Isophorone	ND	10		µg/L	1	8/24/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/24/2008
2-Methylphenol	ND	10		µg/L	1	8/24/2008
3+4-Methylphenol	ND	10		µg/L	1	8/24/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/24/2008
Naphthalene	ND	10		µg/L	1	8/24/2008
2-Nitroaniline	ND	10		µg/L	1	8/24/2008
3-Nitroaniline	ND	10		µg/L	1	8/24/2008
4-Nitroaniline	ND	10		µg/L	1	8/24/2008
Nitrobenzene	ND	10		µg/L	1	8/24/2008
2-Nitrophenol	ND	10		µg/L	1	8/24/2008
4-Nitrophenol	ND	10		µg/L	1	8/24/2008
Pentachlorophenol	ND	40		µg/L	1	8/24/2008
Phenanthrene	ND	10		µg/L	1	8/24/2008
Phenol	ND	10		µg/L	1	8/24/2008
Pyrene	ND	10		µg/L	1	8/24/2008
Pyridine	ND	10		µg/L	1	8/24/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/24/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/24/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/24/2008
Surr: 2,4,6-Tribromophenol	75.5	16.6-150		%REC	1	8/24/2008
Surr: 2-Fluorobiphenyl	85.0	19.6-134		%REC	1	8/24/2008
Surr: 2-Fluorophenol	62.3	9.54-113		%REC	1	8/24/2008
Surr: 4-Terphenyl-d14	64.1	22.7-145		%REC	1	8/24/2008
Surr: Nitrobenzene-d5	83.0	14.6-134		%REC	1	8/24/2008
Surr: Phenol-d5	49.1	10.7-80.3		%REC	1	8/24/2008

**EPA METHOD 8260B: VOLATILES**

Analyst: HL

Benzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Toluene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Ethylbenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Methyl tert-butyl ether (MTBE)	1.0	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-02

Client Sample ID: MW #29  
Collection Date: 8/18/2008 11:10:00 AM  
Date Received: 8/19/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Naphthalene	ND	2.0		µg/L	1	8/22/2008 11:33:54 AM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 11:33:54 AM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 11:33:54 AM
Acetone	ND	10		µg/L	1	8/22/2008 11:33:54 AM
Bromobenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Bromodichloromethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Bromoform	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Bromomethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
2-Butanone	ND	10		µg/L	1	8/22/2008 11:33:54 AM
Carbon disulfide	ND	10		µg/L	1	8/22/2008 11:33:54 AM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Chlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Chloroethane	ND	2.0		µg/L	1	8/22/2008 11:33:54 AM
Chloroform	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Chloromethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2008 11:33:54 AM
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Dibromomethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/22/2008 11:33:54 AM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
2-Hexanone	ND	10		µg/L	1	8/22/2008 11:33:54 AM
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2008 11:33:54 AM
Methylene Chloride	ND	3.0		µg/L	1	8/22/2008 11:33:54 AM
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-02

**Client Sample ID:** MW #29  
**Collection Date:** 8/18/2008 11:10:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Styrene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/22/2008 11:33:54 AM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/27/2008 4:05:13 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2008 11:33:54 AM
Vinyl chloride	ND	1.0		µg/L	1	8/22/2008 11:33:54 AM
Xylenes, Total	ND	1.5		µg/L	1	8/22/2008 11:33:54 AM
Surr: 1,2-Dichloroethane-d4	93.0	68.1-123		%REC	1	8/22/2008 11:33:54 AM
Surr: 4-Bromofluorobenzene	98.3	53.2-145		%REC	1	8/22/2008 11:33:54 AM
Surr: Dibromofluoromethane	93.2	68.5-119		%REC	1	8/22/2008 11:33:54 AM
Surr: Toluene-d8	97.3	64-131		%REC	1	8/22/2008 11:33:54 AM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	210	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	210	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	200	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-03

**Client Sample ID:** Field Blank  
**Collection Date:** 8/18/2008 12:20:00 PM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Toluene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Ethylbenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Naphthalene	ND	2.0		µg/L	1	8/22/2008 12:02:36 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 12:02:36 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 12:02:36 PM
Acetone	ND	10		µg/L	1	8/22/2008 12:02:36 PM
Bromobenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Bromodichloromethane	1.2	1.0		µg/L	1	8/22/2008 12:02:36 PM
Bromoform	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Bromomethane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
2-Butanone	ND	10		µg/L	1	8/22/2008 12:02:36 PM
Carbon disulfide	ND	10		µg/L	1	8/22/2008 12:02:36 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Chlorobenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Chloroethane	ND	2.0		µg/L	1	8/22/2008 12:02:36 PM
Chloroform	11	1.0		µg/L	1	8/22/2008 12:02:36 PM
Chloromethane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2008 12:02:36 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Dibromomethane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/22/2008 12:02:36 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
2-Hexanone	ND	10		µg/L	1	8/22/2008 12:02:36 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-03

**Client Sample ID:** Field Blank  
**Collection Date:** 8/18/2008 12:20:00 PM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2008 12:02:36 PM
Methylene Chloride	ND	3.0		µg/L	1	8/22/2008 12:02:36 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Styrene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/22/2008 12:02:36 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/27/2008 4:33:55 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2008 12:02:36 PM
Vinyl chloride	ND	1.0		µg/L	1	8/22/2008 12:02:36 PM
Xylenes, Total	ND	1.5		µg/L	1	8/22/2008 12:02:36 PM
Surr: 1,2-Dichloroethane-d4	93.2	68.1-123		%REC	1	8/22/2008 12:02:36 PM
Surr: 4-Bromofluorobenzene	108	53.2-145		%REC	1	8/22/2008 12:02:36 PM
Surr: Dibromofluoromethane	97.3	68.5-119		%REC	1	8/22/2008 12:02:36 PM
Surr: Toluene-d8	98.1	64-131		%REC	1	8/22/2008 12:02:36 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-04

**Client Sample ID:** MW #30  
**Collection Date:** 8/18/2008 12:30:00 PM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.15	0.10		mg/L	1	8/19/2008 11:17:41 PM
Chloride	210	1.0		mg/L	10	8/19/2008 11:35:06 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2008 11:17:41 PM
Bromide	5.6	1.0		mg/L	10	8/19/2008 11:35:06 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2008 11:17:41 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2008 11:17:41 PM
Sulfate	12	0.50		mg/L	1	8/19/2008 11:17:41 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-04

Client Sample ID: MW #30  
Collection Date: 8/18/2008 12:30:00 PM  
Date Received: 8/19/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	6.3	1.0		mg/L	1	8/21/2008 9:48:25 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/21/2008 9:48:25 PM
Surr: DNOP	136	58-140		%REC	1	8/21/2008 9:48:25 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	80	2.5		mg/L	50	8/28/2008 1:44:50 PM
Surr: BFB	104	79.2-121		%REC	50	8/28/2008 1:44:50 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.15	0.10		mg/L	1	8/19/2008 11:17:41 PM
Chloride	210	1.0		mg/L	10	8/19/2008 11:35:06 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2008 11:17:41 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2008 11:17:41 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2008 11:17:41 PM
Sulfate	12	0.50		mg/L	1	8/19/2008 11:17:41 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	9/2/2008 2:07:48 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/5/2008 11:54:12 AM
Barium	0.72	0.020		mg/L	1	9/5/2008 11:54:12 AM
Cadmium	ND	0.0020		mg/L	1	9/5/2008 11:54:12 AM
Chromium	ND	0.0060		mg/L	1	9/5/2008 11:54:12 AM
Copper	ND	0.0060		mg/L	1	9/5/2008 11:54:12 AM
Iron	0.37	0.020		mg/L	1	9/5/2008 11:54:12 AM
Lead	ND	0.0050		mg/L	1	9/5/2008 11:54:12 AM
Manganese	1.7	0.010		mg/L	5	9/5/2008 1:28:31 PM
Selenium	ND	0.25		mg/L	5	9/5/2008 1:28:31 PM
Silver	ND	0.0050		mg/L	1	9/5/2008 11:54:12 AM
Zinc	ND	0.050		mg/L	1	9/5/2008 11:54:12 AM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/3/2008 2:17:03 PM
Barium	0.73	0.020		mg/L	1	9/3/2008 2:17:03 PM
Cadmium	ND	0.0020		mg/L	1	9/3/2008 2:17:03 PM
Chromium	ND	0.0060		mg/L	1	9/3/2008 2:17:03 PM
Lead	ND	0.0050		mg/L	1	9/3/2008 2:17:03 PM
Selenium	ND	0.050		mg/L	1	9/3/2008 2:17:03 PM
Silver	ND	0.0050		mg/L	1	9/3/2008 2:17:03 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-04

**Client Sample ID:** MW #30  
**Collection Date:** 8/18/2008 12:30:00 PM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/24/2008
Acenaphthylene	ND	10		µg/L	1	8/24/2008
Aniline	ND	10		µg/L	1	8/24/2008
Anthracene	ND	10		µg/L	1	8/24/2008
Azobenzene	ND	10		µg/L	1	8/24/2008
Benz(a)anthracene	ND	10		µg/L	1	8/24/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/24/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/24/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzoic acid	ND	20		µg/L	1	8/24/2008
Benzyl alcohol	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/24/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/24/2008
Carbazole	ND	10		µg/L	1	8/24/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/24/2008
4-Chloroaniline	ND	10		µg/L	1	8/24/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/24/2008
2-Chlorophenol	ND	10		µg/L	1	8/24/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Chrysene	ND	10		µg/L	1	8/24/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/24/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/24/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/24/2008
Dibenzofuran	ND	10		µg/L	1	8/24/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/24/2008
Diethyl phthalate	ND	10		µg/L	1	8/24/2008
Dimethyl phthalate	ND	10		µg/L	1	8/24/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/24/2008
2,4-Dimethylphenol	19	10		µg/L	1	8/24/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
Fluoranthene	ND	10		µg/L	1	8/24/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-04

Client Sample ID: MW #30  
Collection Date: 8/18/2008 12:30:00 PM  
Date Received: 8/19/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/24/2008
Hexachlorobenzene	ND	10		µg/L	1	8/24/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/24/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/24/2008
Hexachloroethane	ND	10		µg/L	1	8/24/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/24/2008
Isophorone	ND	10		µg/L	1	8/24/2008
2-Methylnaphthalene	210	10		µg/L	1	8/24/2008
2-Methylphenol	ND	10		µg/L	1	8/24/2008
3+4-Methylphenol	25	10		µg/L	1	8/24/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/24/2008
Naphthalene	590	50		µg/L	5	8/26/2008
2-Nitroaniline	ND	10		µg/L	1	8/24/2008
3-Nitroaniline	ND	10		µg/L	1	8/24/2008
4-Nitroaniline	ND	10		µg/L	1	8/24/2008
Nitrobenzene	ND	10		µg/L	1	8/24/2008
2-Nitrophenol	ND	10		µg/L	1	8/24/2008
4-Nitrophenol	ND	10		µg/L	1	8/24/2008
Pentachlorophenol	ND	40		µg/L	1	8/24/2008
Phenanthrene	ND	10		µg/L	1	8/24/2008
Phenol	ND	10		µg/L	1	8/24/2008
Pyrene	ND	10		µg/L	1	8/24/2008
Pyridine	ND	10		µg/L	1	8/24/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/24/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/24/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/24/2008
Surr: 2,4,6-Tribromophenol	76.5	16.6-150		%REC	1	8/24/2008
Surr: 2-Fluorobiphenyl	79.6	19.6-134		%REC	1	8/24/2008
Surr: 2-Fluorophenol	48.1	9.54-113		%REC	1	8/24/2008
Surr: 4-Terphenyl-d14	46.7	22.7-145		%REC	1	8/24/2008
Surr: Nitrobenzene-d5	84.4	14.6-134		%REC	1	8/24/2008
Surr: Phenol-d5	45.6	10.7-80.3		%REC	1	8/24/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	6700	100		µg/L	100	8/22/2008 12:32:35 PM
Toluene	6700	100		µg/L	100	8/22/2008 12:32:35 PM
Ethylbenzene	4500	100		µg/L	100	8/22/2008 12:32:35 PM
Methyl tert-butyl ether (MTBE)	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,2,4-Trimethylbenzene	4500	100		µg/L	100	8/22/2008 12:32:35 PM
1,3,5-Trimethylbenzene	950	100		µg/L	100	8/22/2008 12:32:35 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-04

Client Sample ID: MW #30  
Collection Date: 8/18/2008 12:30:00 PM  
Date Received: 8/19/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,2-Dibromoethane (EDB)	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Naphthalene	950	200		µg/L	100	8/22/2008 12:32:35 PM
1-Methylnaphthalene	ND	400		µg/L	100	8/22/2008 12:32:35 PM
2-Methylnaphthalene	ND	400		µg/L	100	8/22/2008 12:32:35 PM
Acetone	ND	1000		µg/L	100	8/22/2008 12:32:35 PM
Bromobenzene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Bromodichloromethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Bromoform	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Bromomethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
2-Butanone	ND	1000		µg/L	100	8/22/2008 12:32:35 PM
Carbon disulfide	ND	1000		µg/L	100	8/22/2008 12:32:35 PM
Carbon Tetrachloride	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Chlorobenzene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Chloroethane	ND	200		µg/L	100	8/22/2008 12:32:35 PM
Chloroform	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Chloromethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
2-Chlorotoluene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
4-Chlorotoluene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
cis-1,2-DCE	ND	100		µg/L	100	8/22/2008 12:32:35 PM
cis-1,3-Dichloropropene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,2-Dibromo-3-chloropropane	ND	200		µg/L	100	8/22/2008 12:32:35 PM
Dibromochloromethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Dibromomethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,2-Dichlorobenzene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,3-Dichlorobenzene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,4-Dichlorobenzene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Dichlorodifluoromethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,1-Dichloroethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,1-Dichloroethene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,2-Dichloropropane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,3-Dichloropropane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
2,2-Dichloropropane	ND	200		µg/L	100	8/22/2008 12:32:35 PM
1,1-Dichloropropane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Hexachlorobutadiene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
2-Hexanone	ND	1000		µg/L	100	8/22/2008 12:32:35 PM
Isopropylbenzene	150	100		µg/L	100	8/22/2008 12:32:35 PM
4-Isopropyltoluene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
4-Methyl-2-pentanone	ND	1000		µg/L	100	8/22/2008 12:32:35 PM
Methylene Chloride	ND	300		µg/L	100	8/22/2008 12:32:35 PM
n-Butylbenzene	140	100		µg/L	100	8/22/2008 12:32:35 PM
n-Propylbenzene	610	100		µg/L	100	8/22/2008 12:32:35 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-04

**Client Sample ID:** MW #30  
**Collection Date:** 8/18/2008 12:30:00 PM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Styrene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
tert-Butylbenzene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,1,1,2-Tetrachloroethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,1,2,2-Tetrachloroethane	ND	200		µg/L	100	8/22/2008 12:32:35 PM
Tetrachloroethene (PCE)	ND	100		µg/L	100	8/27/2008 5:03:53 PM
trans-1,2-DCE	ND	100		µg/L	100	8/22/2008 12:32:35 PM
trans-1,3-Dichloropropene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,2,3-Trichlorobenzene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,2,4-Trichlorobenzene	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,1,1-Trichloroethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,1,2-Trichloroethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Trichloroethene (TCE)	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Trichlorofluoromethane	ND	100		µg/L	100	8/22/2008 12:32:35 PM
1,2,3-Trichloropropane	ND	200		µg/L	100	8/22/2008 12:32:35 PM
Vinyl chloride	ND	100		µg/L	100	8/22/2008 12:32:35 PM
Xylenes, Total	18000	150		µg/L	100	8/22/2008 12:32:35 PM
Surr: 1,2-Dichloroethane-d4	93.3	68.1-123		%REC	100	8/22/2008 12:32:35 PM
Surr: 4-Bromofluorobenzene	93.0	53.2-145		%REC	100	8/22/2008 12:32:35 PM
Surr: Dibromofluoromethane	94.3	68.5-119		%REC	100	8/22/2008 12:32:35 PM
Surr: Toluene-d8	102	64-131		%REC	100	8/22/2008 12:32:35 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1400	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	1400	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1500	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-05

**Client Sample ID:** RW #1  
**Collection Date:** 8/18/2008 9:15:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.31	0.10		mg/L	1	8/19/2008 11:52:31 PM
Chloride	250	1.0		mg/L	10	8/20/2008 12:09:55 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2008 11:52:31 PM
Bromide	2.3	0.10		mg/L	1	8/19/2008 11:52:31 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2008 11:52:31 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2008 11:52:31 PM
Sulfate	10	0.50		mg/L	1	8/19/2008 11:52:31 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-05

**Client Sample ID:** RW #1  
**Collection Date:** 8/18/2008 9:15:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	47	1.0		mg/L	1	8/21/2008 10:22:27 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/21/2008 10:22:27 PM
Surr: DNOP	135	58-140		%REC	1	8/21/2008 10:22:27 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	6.7	2.5		mg/L	50	8/28/2008 2:15:16 PM
Surr: BFB	102	79.2-121		%REC	50	8/28/2008 2:15:16 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.31	0.10		mg/L	1	8/19/2008 11:52:31 PM
Chloride	250	1.0		mg/L	10	8/20/2008 12:09:55 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2008 11:52:31 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2008 11:52:31 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2008 11:52:31 PM
Sulfate	10	0.50		mg/L	1	8/19/2008 11:52:31 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	9/2/2008 2:09:36 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/5/2008 11:58:26 AM
Barium	1.7	0.10		mg/L	5	9/5/2008 1:31:26 PM
Cadmium	ND	0.0020		mg/L	1	9/5/2008 11:58:26 AM
Chromium	ND	0.0060		mg/L	1	9/5/2008 11:58:26 AM
Copper	ND	0.0060		mg/L	1	9/5/2008 11:58:26 AM
Iron	3.7	0.10		mg/L	5	9/5/2008 1:31:26 PM
Lead	ND	0.0050		mg/L	1	9/5/2008 11:58:26 AM
Manganese	2.5	0.010		mg/L	5	9/5/2008 1:31:26 PM
Selenium	ND	0.25		mg/L	5	9/5/2008 1:31:26 PM
Silver	ND	0.0050		mg/L	1	9/5/2008 11:58:26 AM
Zinc	0.052	0.050		mg/L	1	9/5/2008 11:58:26 AM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/3/2008 2:20:51 PM
Barium	1.9	0.10		mg/L	5	9/3/2008 3:27:14 PM
Cadmium	ND	0.0020		mg/L	1	9/3/2008 2:20:51 PM
Chromium	ND	0.0060		mg/L	1	9/3/2008 2:20:51 PM
Lead	0.0076	0.0050		mg/L	1	9/3/2008 2:20:51 PM
Selenium	ND	0.050		mg/L	1	9/3/2008 2:20:51 PM
Silver	ND	0.0050		mg/L	1	9/3/2008 2:20:51 PM

**EPA METHOD 8270C: SEMIVOLATILES**

Analyst: JDC

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-05

Client Sample ID: RW #1  
Collection Date: 8/18/2008 9:15:00 AM  
Date Received: 8/19/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Acenaphthene	11	10		µg/L	1	8/24/2008
Acenaphthylene	ND	10		µg/L	1	8/24/2008
Aniline	ND	10		µg/L	1	8/24/2008
Anthracene	ND	10		µg/L	1	8/24/2008
Azobenzene	ND	10		µg/L	1	8/24/2008
Benz(a)anthracene	ND	10		µg/L	1	8/24/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/24/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/24/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzoic acid	ND	20		µg/L	1	8/24/2008
Benzyl alcohol	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-ethylhexyl)phthalate	51	10		µg/L	1	8/24/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/24/2008
Carbazole	ND	10		µg/L	1	8/24/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/24/2008
4-Chloroaniline	ND	10		µg/L	1	8/24/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/24/2008
2-Chlorophenol	ND	10		µg/L	1	8/24/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Chrysene	ND	10		µg/L	1	8/24/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/24/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/24/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/24/2008
Dibenzofuran	14	10		µg/L	1	8/24/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/24/2008
Diethyl phthalate	ND	10		µg/L	1	8/24/2008
Dimethyl phthalate	ND	10		µg/L	1	8/24/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/24/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/24/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
Fluoranthene	ND	10		µg/L	1	8/24/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-05

**Client Sample ID:** RW #1  
**Collection Date:** 8/18/2008 9:15:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	58	10		µg/L	1	8/24/2008
Hexachlorobenzene	ND	10		µg/L	1	8/24/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/24/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/24/2008
Hexachloroethane	ND	10		µg/L	1	8/24/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/24/2008
Isophorone	ND	10		µg/L	1	8/24/2008
2-Methylnaphthalene	540	50		µg/L	5	8/25/2008
2-Methylphenol	ND	10		µg/L	1	8/24/2008
3+4-Methylphenol	ND	10		µg/L	1	8/24/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/24/2008
Naphthalene	290	50		µg/L	5	8/25/2008
2-Nitroaniline	ND	10		µg/L	1	8/24/2008
3-Nitroaniline	ND	10		µg/L	1	8/24/2008
4-Nitroaniline	ND	10		µg/L	1	8/24/2008
Nitrobenzene	ND	10		µg/L	1	8/24/2008
2-Nitrophenol	ND	10		µg/L	1	8/24/2008
4-Nitrophenol	ND	10		µg/L	1	8/24/2008
Pentachlorophenol	ND	40		µg/L	1	8/24/2008
Phenanthrene	77	10		µg/L	1	8/24/2008
Phenol	ND	10		µg/L	1	8/24/2008
Pyrene	ND	10		µg/L	1	8/24/2008
Pyridine	ND	10		µg/L	1	8/24/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/24/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/24/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/24/2008
Surr: 2,4,6-Tribromophenol	45.4	16.6-150		%REC	1	8/24/2008
Surr: 2-Fluorobiphenyl	87.8	19.6-134		%REC	1	8/24/2008
Surr: 2-Fluorophenol	82.6	9.54-113		%REC	1	8/24/2008
Surr: 4-Terphenyl-d14	48.9	22.7-145		%REC	1	8/24/2008
Surr: Nitrobenzene-d5	107	14.6-134		%REC	1	8/24/2008
Surr: Phenol-d5	63.9	10.7-80.3		%REC	1	8/24/2008

**EPA METHOD 8260B: VOLATILES**

Analyst: HL

Benzene	200	5.0		µg/L	5	8/26/2008 4:33:38 PM
Toluene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Ethylbenzene	210	5.0		µg/L	5	8/26/2008 4:33:38 PM
Methyl tert-butyl ether (MTBE)	21	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,2,4-Trimethylbenzene	520	10		µg/L	10	8/26/2008 3:55:14 PM
1,3,5-Trimethylbenzene	80	5.0		µg/L	5	8/26/2008 4:33:38 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-05

**Client Sample ID:** RW #1  
**Collection Date:** 8/18/2008 9:15:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Naphthalene	260	10		µg/L	5	8/26/2008 4:33:38 PM
1-Methylnaphthalene	130	20		µg/L	5	8/26/2008 4:33:38 PM
2-Methylnaphthalene	190	20		µg/L	5	8/26/2008 4:33:38 PM
Acetone	ND	50		µg/L	5	8/26/2008 4:33:38 PM
Bromobenzene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Bromodichloromethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Bromoform	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Bromomethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
2-Butanone	ND	50		µg/L	5	8/26/2008 4:33:38 PM
Carbon disulfide	ND	50		µg/L	5	8/26/2008 4:33:38 PM
Carbon Tetrachloride	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Chlorobenzene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Chloroethane	ND	10		µg/L	5	8/26/2008 4:33:38 PM
Chloroform	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Chloromethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
2-Chlorotoluene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
4-Chlorotoluene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
cis-1,2-DCE	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	5	8/26/2008 4:33:38 PM
Dibromochloromethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Dibromomethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Dichlorodifluoromethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,1-Dichloroethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,1-Dichloroethene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,2-Dichloropropane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,3-Dichloropropane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
2,2-Dichloropropane	ND	10		µg/L	5	8/26/2008 4:33:38 PM
1,1-Dichloropropene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Hexachlorobutadiene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
2-Hexanone	ND	50		µg/L	5	8/26/2008 4:33:38 PM
Isopropylbenzene	110	5.0		µg/L	5	8/26/2008 4:33:38 PM
4-Isopropyltoluene	11	5.0		µg/L	5	8/26/2008 4:33:38 PM
4-Methyl-2-pentanone	ND	50		µg/L	5	8/26/2008 4:33:38 PM
Methylene Chloride	ND	15		µg/L	5	8/26/2008 4:33:38 PM
n-Butylbenzene	16	5.0		µg/L	5	8/26/2008 4:33:38 PM
n-Propylbenzene	140	5.0		µg/L	5	8/26/2008 4:33:38 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-05

Client Sample ID: RW #1  
Collection Date: 8/18/2008 9:15:00 AM  
Date Received: 8/19/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	23	5.0		µg/L	5	8/26/2008 4:33:38 PM
Styrene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
tert-Butylbenzene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,1,2,2-Tetrachloroethane	ND	10		µg/L	5	8/26/2008 4:33:38 PM
Tetrachloroethene (PCE)	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
trans-1,2-DCE	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Trichloroethene (TCE)	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Trichlorofluoromethane	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
1,2,3-Trichloropropane	ND	10		µg/L	5	8/26/2008 4:33:38 PM
Vinyl chloride	ND	5.0		µg/L	5	8/26/2008 4:33:38 PM
Xylenes, Total	67	7.5		µg/L	5	8/26/2008 4:33:38 PM
Surr: 1,2-Dichloroethane-d4	99.2	68.1-123		%REC	5	8/26/2008 4:33:38 PM
Surr: 4-Bromofluorobenzene	105	53.2-145		%REC	5	8/26/2008 4:33:38 PM
Surr: Dibromofluoromethane	98.2	68.5-119		%REC	5	8/26/2008 4:33:38 PM
Surr: Toluene-d8	106	64-131		%REC	5	8/26/2008 4:33:38 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1100	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	1100	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1100	1.0		mg CO2/L	1	8/22/2008

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-06

**Client Sample ID:** RW #1 FD  
**Collection Date:** 8/18/2008 9:25:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.32	0.10		mg/L	1	8/20/2008 12:27:20 AM
Chloride	270	1.0		mg/L	10	8/20/2008 12:44:45 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2008 12:27:20 AM
Bromide	2.0	0.10		mg/L	1	8/20/2008 12:27:20 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 12:27:20 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 12:27:20 AM
Sulfate	10	0.50		mg/L	1	8/20/2008 12:27:20 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: RW #1 FD

Lab Order: 0808297

Collection Date: 8/18/2008 9:25:00 AM

Project: Refinery Wells - Annual 2008

Date Received: 8/19/2008

Lab ID: 0808297-06

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	190	10		mg/L	10	8/26/2008 3:17:44 PM
Motor Oil Range Organics (MRO)	ND	50		mg/L	10	8/26/2008 3:17:44 PM
Surr: DNOP	0	58-140	S	%REC	10	8/26/2008 3:17:44 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	6.2	2.5		mg/L	50	8/28/2008 2:45:45 PM
Surr: BFB	102	79.2-121		%REC	50	8/28/2008 2:45:45 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.32	0.10		mg/L	1	8/20/2008 12:27:20 AM
Chloride	270	1.0		mg/L	10	8/20/2008 12:44:45 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2008 12:27:20 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 12:27:20 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 12:27:20 AM
Sulfate	10	0.50		mg/L	1	8/20/2008 12:27:20 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	9/2/2008 2:11:23 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/5/2008 12:03:59 PM
Barium	2.1	0.20		mg/L	10	9/5/2008 1:34:11 PM
Cadmium	ND	0.0020		mg/L	1	9/5/2008 12:03:59 PM
Chromium	ND	0.0060		mg/L	1	9/5/2008 12:03:59 PM
Copper	ND	0.0060		mg/L	1	9/5/2008 12:03:59 PM
Iron	4.4	0.20		mg/L	10	9/5/2008 1:34:11 PM
Lead	0.0052	0.0050		mg/L	1	9/5/2008 12:03:59 PM
Manganese	3.1	0.020		mg/L	10	9/5/2008 1:34:11 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 1:12:08 PM
Silver	ND	0.0050		mg/L	1	9/5/2008 12:03:59 PM
Zinc	0.050	0.050		mg/L	1	9/5/2008 12:03:59 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/3/2008 2:26:42 PM
Barium	1.8	0.10		mg/L	5	9/3/2008 3:41:55 PM
Cadmium	ND	0.0020		mg/L	1	9/3/2008 2:26:42 PM
Chromium	ND	0.0060		mg/L	1	9/3/2008 2:26:42 PM
Lead	0.011	0.0050		mg/L	1	9/3/2008 2:26:42 PM
Selenium	ND	0.050		mg/L	1	9/3/2008 2:26:42 PM
Silver	ND	0.0050		mg/L	1	9/3/2008 2:26:42 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-06

**Client Sample ID:** RW #1 FD  
**Collection Date:** 8/18/2008 9:25:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/24/2008
Acenaphthylene	ND	10		µg/L	1	8/24/2008
Aniline	ND	10		µg/L	1	8/24/2008
Anthracene	ND	10		µg/L	1	8/24/2008
Azobenzene	ND	10		µg/L	1	8/24/2008
Benz(a)anthracene	ND	10		µg/L	1	8/24/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/24/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/24/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzoic acid	ND	20		µg/L	1	8/24/2008
Benzyl alcohol	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-ethylhexyl)phthalate	19	10		µg/L	1	8/24/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/24/2008
Carbazole	ND	10		µg/L	1	8/24/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/24/2008
4-Chloroaniline	ND	10		µg/L	1	8/24/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/24/2008
2-Chlorophenol	ND	10		µg/L	1	8/24/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Chrysene	ND	10		µg/L	1	8/24/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/24/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/24/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/24/2008
Dibenzofuran	ND	10		µg/L	1	8/24/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/24/2008
Diethyl phthalate	ND	10		µg/L	1	8/24/2008
Dimethyl phthalate	ND	10		µg/L	1	8/24/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/24/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/24/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
Fluoranthene	ND	10		µg/L	1	8/24/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-06

Client Sample ID: RW #1 FD  
Collection Date: 8/18/2008 9:25:00 AM  
Date Received: 8/19/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	24	10		µg/L	1	8/24/2008
Hexachlorobenzene	ND	10		µg/L	1	8/24/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/24/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/24/2008
Hexachloroethane	ND	10		µg/L	1	8/24/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/24/2008
Isophorone	ND	10		µg/L	1	8/24/2008
2-Methylnaphthalene	210	50		µg/L	5	8/25/2008
2-Methylphenol	ND	10		µg/L	1	8/24/2008
3+4-Methylphenol	ND	10		µg/L	1	8/24/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/24/2008
Naphthalene	180	10		µg/L	1	8/24/2008
2-Nitroaniline	ND	10		µg/L	1	8/24/2008
3-Nitroaniline	ND	10		µg/L	1	8/24/2008
4-Nitroaniline	ND	10		µg/L	1	8/24/2008
Nitrobenzene	ND	10		µg/L	1	8/24/2008
2-Nitrophenol	ND	10		µg/L	1	8/24/2008
4-Nitrophenol	ND	10		µg/L	1	8/24/2008
Pentachlorophenol	ND	40		µg/L	1	8/24/2008
Phenanthrene	30	10		µg/L	1	8/24/2008
Phenol	ND	10		µg/L	1	8/24/2008
Pyrene	ND	10		µg/L	1	8/24/2008
Pyridine	ND	10		µg/L	1	8/24/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/24/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/24/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/24/2008
Surr: 2,4,6-Tribromophenol	19.4	16.6-150		%REC	1	8/24/2008
Surr: 2-Fluorobiphenyl	89.3	19.6-134		%REC	1	8/24/2008
Surr: 2-Fluorophenol	24.8	9.54-113		%REC	1	8/24/2008
Surr: 4-Terphenyl-d14	59.1	22.7-145		%REC	1	8/24/2008
Surr: Nitrobenzene-d5	91.6	14.6-134		%REC	1	8/24/2008
Surr: Phenol-d5	32.5	10.7-80.3		%REC	1	8/24/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	210	5.0		µg/L	5	8/26/2008 6:26:35 PM
Toluene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Ethylbenzene	210	5.0		µg/L	5	8/26/2008 6:26:35 PM
Methyl tert-butyl ether (MTBE)	22	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,2,4-Trimethylbenzene	530	10		µg/L	10	8/26/2008 5:48:04 PM
1,3,5-Trimethylbenzene	82	5.0		µg/L	5	8/26/2008 6:26:35 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-06

**Client Sample ID:** RW #1 FD  
**Collection Date:** 8/18/2008 9:25:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Naphthalene	260	10		µg/L	5	8/26/2008 6:26:35 PM
1-Methylnaphthalene	140	20		µg/L	5	8/26/2008 6:26:35 PM
2-Methylnaphthalene	180	20		µg/L	5	8/26/2008 6:26:35 PM
Acetone	ND	50		µg/L	5	8/26/2008 6:26:35 PM
Bromobenzene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Bromodichloromethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Bromoform	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Bromomethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
2-Butanone	ND	50		µg/L	5	8/26/2008 6:26:35 PM
Carbon disulfide	ND	50		µg/L	5	8/26/2008 6:26:35 PM
Carbon Tetrachloride	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Chlorobenzene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Chloroethane	ND	10		µg/L	5	8/26/2008 6:26:35 PM
Chloroform	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Chloromethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
2-Chlorotoluene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
4-Chlorotoluene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
cis-1,2-DCE	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
cis-1,3-Dichloropropene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,2-Dibromo-3-chloropropane	ND	10		µg/L	5	8/26/2008 6:26:35 PM
Dibromochloromethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Dibromomethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Dichlorodifluoromethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,1-Dichloroethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,1-Dichloroethene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,2-Dichloropropane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,3-Dichloropropane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
2,2-Dichloropropane	ND	10		µg/L	5	8/26/2008 6:26:35 PM
1,1-Dichloropropene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Hexachlorobutadiene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
2-Hexanone	ND	50		µg/L	5	8/26/2008 6:26:35 PM
Isopropylbenzene	110	5.0		µg/L	5	8/26/2008 6:26:35 PM
4-Isopropyltoluene	10	5.0		µg/L	5	8/26/2008 6:26:35 PM
4-Methyl-2-pentanone	ND	50		µg/L	5	8/26/2008 6:26:35 PM
Methylene Chloride	ND	15		µg/L	5	8/26/2008 6:26:35 PM
n-Butylbenzene	16	5.0		µg/L	5	8/26/2008 6:26:35 PM
n-Propylbenzene	120	5.0		µg/L	5	8/26/2008 6:26:35 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-06

**Client Sample ID:** RW #1 FD  
**Collection Date:** 8/18/2008 9:25:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	21	5.0		µg/L	5	8/26/2008 6:26:35 PM
Styrene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
tert-Butylbenzene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,1,2,2-Tetrachloroethane	ND	10		µg/L	5	8/26/2008 6:26:35 PM
Tetrachloroethene (PCE)	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
trans-1,2-DCE	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
trans-1,3-Dichloropropene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Trichloroethene (TCE)	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Trichlorofluoromethane	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
1,2,3-Trichloropropane	ND	10		µg/L	5	8/26/2008 6:26:35 PM
Vinyl chloride	ND	5.0		µg/L	5	8/26/2008 6:26:35 PM
Xylenes, Total	72	7.5		µg/L	5	8/26/2008 6:26:35 PM
Surr: 1,2-Dichloroethane-d4	101	68.1-123		%REC	5	8/26/2008 6:26:35 PM
Surr: 4-Bromofluorobenzene	107	53.2-145		%REC	5	8/26/2008 6:26:35 PM
Surr: Dibromofluoromethane	98.5	68.5-119		%REC	5	8/26/2008 6:26:35 PM
Surr: Toluene-d8	105	64-131		%REC	5	8/26/2008 6:26:35 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1100	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	1100	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1100	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW #4**Lab Order:** 0808297**Collection Date:** 8/18/2008 9:50:00 AM**Project:** Refinery Wells - Annual 2008**Date Received:** 8/19/2008**Lab ID:** 0808297-07**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.23	0.10		mg/L	1	8/20/2008 1:02:09 AM
Chloride	190	1.0		mg/L	10	8/20/2008 1:19:33 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2008 1:02:09 AM
Bromide	3.5	0.10		mg/L	1	8/20/2008 1:02:09 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 1:02:09 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 1:02:09 AM
Sulfate	4.4	0.50		mg/L	1	8/20/2008 1:02:09 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-07

**Client Sample ID:** MW #4  
**Collection Date:** 8/18/2008 9:50:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	17	1.0		mg/L	1	8/21/2008 11:30:38 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/21/2008 11:30:38 PM
Surr: DNOP	139	58-140		%REC	1	8/21/2008 11:30:38 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	10	2.5		mg/L	50	8/28/2008 3:16:11 PM
Surr: BFB	92.0	79.2-121		%REC	50	8/28/2008 3:16:11 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.23	0.10		mg/L	1	8/20/2008 1:02:09 AM
Chloride	190	1.0		mg/L	10	8/20/2008 1:19:33 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2008 1:02:09 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 1:02:09 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 1:02:09 AM
Sulfate	4.4	0.50		mg/L	1	8/20/2008 1:02:09 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	9/2/2008 2:13:11 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/5/2008 12:07:53 PM
Barium	1.3	0.10		mg/L	5	9/5/2008 1:37:08 PM
Cadmium	ND	0.0020		mg/L	1	9/5/2008 12:07:53 PM
Chromium	ND	0.0060		mg/L	1	9/5/2008 12:07:53 PM
Copper	ND	0.0060		mg/L	1	9/5/2008 12:07:53 PM
Iron	9.6	1.0		mg/L	50	9/5/2008 1:39:54 PM
Lead	ND	0.0050		mg/L	1	9/5/2008 12:07:53 PM
Manganese	3.1	0.010		mg/L	5	9/5/2008 1:37:08 PM
Selenium	ND	0.25		mg/L	5	9/5/2008 1:37:08 PM
Silver	ND	0.0050		mg/L	1	9/5/2008 12:07:53 PM
Zinc	ND	0.050		mg/L	1	9/5/2008 12:07:53 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/3/2008 2:30:28 PM
Barium	1.7	0.10		mg/L	5	9/3/2008 3:44:38 PM
Cadmium	ND	0.0020		mg/L	1	9/3/2008 2:30:28 PM
Chromium	0.016	0.0060		mg/L	1	9/3/2008 2:30:28 PM
Lead	0.012	0.0050		mg/L	1	9/3/2008 2:30:28 PM
Selenium	ND	0.050		mg/L	1	9/3/2008 2:30:28 PM
Silver	ND	0.0050		mg/L	1	9/3/2008 2:30:28 PM

## EPA METHOD 8270C: SEMIVOLATILES

Analyst: JDC

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-07

**Client Sample ID:** MW #4  
**Collection Date:** 8/18/2008 9:50:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/24/2008
Acenaphthylene	ND	10		µg/L	1	8/24/2008
Aniline	ND	10		µg/L	1	8/24/2008
Anthracene	ND	10		µg/L	1	8/24/2008
Azobenzene	ND	10		µg/L	1	8/24/2008
Benz(a)anthracene	ND	10		µg/L	1	8/24/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/24/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/24/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/24/2008
Benzoic acid	ND	20		µg/L	1	8/24/2008
Benzyl alcohol	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/24/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/24/2008
Bis(2-ethylhexyl)phthalate	22	10		µg/L	1	8/24/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/24/2008
Carbazole	ND	10		µg/L	1	8/24/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/24/2008
4-Chloroaniline	ND	10		µg/L	1	8/24/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/24/2008
2-Chlorophenol	ND	10		µg/L	1	8/24/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/24/2008
Chrysene	ND	10		µg/L	1	8/24/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/24/2008
Di-n-octyl phthalate	12	10		µg/L	1	8/24/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/24/2008
Dibenzofuran	ND	10		µg/L	1	8/24/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/24/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/24/2008
Diethyl phthalate	ND	10		µg/L	1	8/24/2008
Dimethyl phthalate	ND	10		µg/L	1	8/24/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/24/2008
2,4-Dimethylphenol	22	10		µg/L	1	8/24/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/24/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/24/2008
Fluoranthene	ND	10		µg/L	1	8/24/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW #4

Lab Order: 0808297

Collection Date: 8/18/2008 9:50:00 AM

Project: Refinery Wells - Annual 2008

Date Received: 8/19/2008

Lab ID: 0808297-07

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Fluorene	ND	10		µg/L	1	8/24/2008
Hexachlorobenzene	ND	10		µg/L	1	8/24/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/24/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/24/2008
Hexachloroethane	ND	10		µg/L	1	8/24/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/24/2008
Isophorone	ND	10		µg/L	1	8/24/2008
2-Methylnaphthalene	82	10		µg/L	1	8/24/2008
2-Methylphenol	ND	10		µg/L	1	8/24/2008
3+4-Methylphenol	ND	10		µg/L	1	8/24/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/24/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/24/2008
Naphthalene	96	10		µg/L	1	8/24/2008
2-Nitroaniline	ND	10		µg/L	1	8/24/2008
3-Nitroaniline	ND	10		µg/L	1	8/24/2008
4-Nitroaniline	ND	10		µg/L	1	8/24/2008
Nitrobenzene	ND	10		µg/L	1	8/24/2008
2-Nitrophenol	ND	10		µg/L	1	8/24/2008
4-Nitrophenol	ND	10		µg/L	1	8/24/2008
Pentachlorophenol	ND	40		µg/L	1	8/24/2008
Phenanthrene	ND	10		µg/L	1	8/24/2008
Phenol	ND	10		µg/L	1	8/24/2008
Pyrene	ND	10		µg/L	1	8/24/2008
Pyridine	ND	10		µg/L	1	8/24/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/24/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/24/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/24/2008
Surr: 2,4,6-Tribromophenol	104	16.6-150		%REC	1	8/24/2008
Surr: 2-Fluorobiphenyl	71.8	19.6-134		%REC	1	8/24/2008
Surr: 2-Fluorophenol	60.8	9.54-113		%REC	1	8/24/2008
Surr: 4-Terphenyl-d14	60.7	22.7-145		%REC	1	8/24/2008
Surr: Nitrobenzene-d5	73.5	14.6-134		%REC	1	8/24/2008
Surr: Phenol-d5	51.3	10.7-80.3		%REC	1	8/24/2008
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	530	10		µg/L	10	8/26/2008 7:40:54 PM
Toluene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Ethylbenzene	110	10		µg/L	10	8/26/2008 7:40:54 PM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,2,4-Trimethylbenzene	690	10		µg/L	10	8/26/2008 7:40:54 PM
1,3,5-Trimethylbenzene	230	10		µg/L	10	8/26/2008 7:40:54 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-07

**Client Sample ID:** MW #4  
**Collection Date:** 8/18/2008 9:50:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Naphthalene	170	20		µg/L	10	8/26/2008 7:40:54 PM
1-Methylnaphthalene	61	40		µg/L	10	8/26/2008 7:40:54 PM
2-Methylnaphthalene	88	40		µg/L	10	8/26/2008 7:40:54 PM
Acetone	ND	100		µg/L	10	8/26/2008 7:40:54 PM
Bromobenzene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Bromodichloromethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Bromoform	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Bromomethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
2-Butanone	ND	100		µg/L	10	8/26/2008 7:40:54 PM
Carbon disulfide	ND	100		µg/L	10	8/26/2008 7:40:54 PM
Carbon Tetrachloride	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Chlorobenzene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Chloroethane	ND	20		µg/L	10	8/26/2008 7:40:54 PM
Chloroform	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Chloromethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
2-Chlorotoluene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
4-Chlorotoluene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
cis-1,2-DCE	ND	10		µg/L	10	8/26/2008 7:40:54 PM
cis-1,3-Dichloropropene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	8/26/2008 7:40:54 PM
Dibromochloromethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Dibromomethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,2-Dichlorobenzene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,3-Dichlorobenzene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,4-Dichlorobenzene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Dichlorodifluoromethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,1-Dichloroethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,1-Dichloroethene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,2-Dichloropropane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,3-Dichloropropane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
2,2-Dichloropropane	ND	20		µg/L	10	8/26/2008 7:40:54 PM
1,1-Dichloropropene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Hexachlorobutadiene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
2-Hexanone	ND	100		µg/L	10	8/26/2008 7:40:54 PM
Isopropylbenzene	56	10		µg/L	10	8/26/2008 7:40:54 PM
4-Isopropyltoluene	14	10		µg/L	10	8/26/2008 7:40:54 PM
4-Methyl-2-pentanone	ND	100		µg/L	10	8/26/2008 7:40:54 PM
Methylene Chloride	ND	30		µg/L	10	8/26/2008 7:40:54 PM
n-Butylbenzene	36	10		µg/L	10	8/26/2008 7:40:54 PM
n-Propylbenzene	60	10		µg/L	10	8/26/2008 7:40:54 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-07

**Client Sample ID:** MW #4  
**Collection Date:** 8/18/2008 9:50:00 AM  
**Date Received:** 8/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
sec-Butylbenzene	12	10		µg/L	10	8/26/2008 7:40:54 PM
Styrene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
tert-Butylbenzene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	8/26/2008 7:40:54 PM
Tetrachloroethene (PCE)	ND	10		µg/L	10	8/26/2008 7:40:54 PM
trans-1,2-DCE	ND	10		µg/L	10	8/26/2008 7:40:54 PM
trans-1,3-Dichloropropene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,2,3-Trichlorobenzene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,1,1-Trichloroethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,1,2-Trichloroethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Trichloroethene (TCE)	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Trichlorofluoromethane	ND	10		µg/L	10	8/26/2008 7:40:54 PM
1,2,3-Trichloropropane	ND	20		µg/L	10	8/26/2008 7:40:54 PM
Vinyl chloride	ND	10		µg/L	10	8/26/2008 7:40:54 PM
Xylenes, Total	1600	15		µg/L	10	8/26/2008 7:40:54 PM
Surr: 1,2-Dichloroethane-d4	98.5	68.1-123		%REC	10	8/26/2008 7:40:54 PM
Surr: 4-Bromofluorobenzene	99.0	53.2-145		%REC	10	8/26/2008 7:40:54 PM
Surr: Dibromofluoromethane	102	68.5-119		%REC	10	8/26/2008 7:40:54 PM
Surr: Toluene-d8	109	64-131		%REC	10	8/26/2008 7:40:54 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1000	40		mg/L CaCO3	2	8/22/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/22/2008
Bicarbonate	1000	40		mg/L CaCO3	2	8/22/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1000	1.0		mg CO2/L	1	8/22/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808297  
**Project:** Refinery Wells - Annual 2008  
**Lab ID:** 0808297-08

**Client Sample ID:** TRIP BLANK  
**Collection Date:**  
**Date Received:** 8/19/2008  
**Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/28/2008 3:46:43 PM
Surr: BFB	80.7	79.2-121		%REC	1	8/28/2008 3:46:43 PM
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Toluene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Ethylbenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Naphthalene	ND	2.0		µg/L	1	8/22/2008 2:31:19 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 2:31:19 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 2:31:19 PM
Acetone	ND	10		µg/L	1	8/22/2008 2:31:19 PM
Bromobenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Bromoform	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Bromomethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
2-Butanone	ND	10		µg/L	1	8/22/2008 2:31:19 PM
Carbon disulfide	ND	10		µg/L	1	8/22/2008 2:31:19 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Chlorobenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Chloroethane	ND	2.0		µg/L	1	8/22/2008 2:31:19 PM
Chloroform	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Chloromethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2008 2:31:19 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Dibromomethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 23-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808297  
Project: Refinery Wells - Annual 2008  
Lab ID: 0808297-08

Client Sample ID: TRIP BLANK  
Collection Date:  
Date Received: 8/19/2008  
Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
2,2-Dichloropropane	ND	2.0		µg/L	1	8/22/2008 2:31:19 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
2-Hexanone	ND	10		µg/L	1	8/22/2008 2:31:19 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2008 2:31:19 PM
Methylene Chloride	ND	3.0		µg/L	1	8/22/2008 2:31:19 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Styrene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/22/2008 2:31:19 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2008 2:31:19 PM
Vinyl chloride	ND	1.0		µg/L	1	8/22/2008 2:31:19 PM
Xylenes, Total	ND	1.5		µg/L	1	8/22/2008 2:31:19 PM
Surr: 1,2-Dichloroethane-d4	93.2	68.1-123		%REC	1	8/22/2008 2:31:19 PM
Surr: 4-Bromofluorobenzene	105	53.2-145		%REC	1	8/22/2008 2:31:19 PM
Surr: Dibromofluoromethane	96.3	68.5-119		%REC	1	8/22/2008 2:31:19 PM
Surr: Toluene-d8	98.1	64-131		%REC	1	8/22/2008 2:31:19 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**CASE NARRATIVE**

September 5, 2008

**Lab Name:** Anatek Labs, Inc. 1282 Alturas Drive, Moscow, ID 83843 [www.anateklabs.com](http://www.anateklabs.com) FL NELAP E87893, NV ID13-2004-31, WA DOE C126, OR ELAP ID200001, MT 0028, ID, CO, NM

**Project Tracking No.:** 0808297  
**Anatek Batch:** 080820024

**Project Summary:** Six (6) water samples were received on 8/20/2008 for metals (EPA 6020A) analysis. All samples were received in good condition and with the appropriate chain of custody. Samples were received at 1.55C.

<u>Client Sample ID</u>	<u>Anatek Sample ID</u>	<u>Method/Prep Method</u>
0808297-01F / MW-#8	080820024-001	EPA 6020A/3005A
0808297-02F / MW-#29	080820024-002	EPA 6020A/3005A
0808297-04F / MW-30	080820024-003	EPA 6020A/3005A
0808297-05F / RW#1	080820024-004	EPA 6020A/3005A
0808297-06F / RW#1 FD	080820024-005	EPA 6020A/3005A
0808297-07F / MW #4	080820024-006	EPA 6020A/3005A

**QA/QC Checks**

<u>Parameters</u>	<u>Yes / No</u>	<u>Exceptions / Deviations</u>
Sample Holding Time Valid?	Y	NA
Surrogate Recoveries Valid?	Y	NA
QC Sample(s) Recoveries Valid?	Y	NA
Method Blank(s) Valid?	Y	NA
Tune(s) Valid?	Y	NA
Internal Standard Responses Valid?	Y	NA
Initial Calibration Curve(s) Valid?	Y	NA
Continuing Calibration(s) Valid?	Y	NA
Comments:	Y	NA

**1. Holding Time Requirements**

No problems encountered.

**2. GC/MS Tune Requirements**

NA

**3. Calibration Requirements**

No problems encountered.

**4. Surrogate Recovery Requirements**

NA

**5. QC Sample (LCS/MS/MSD) Recovery Requirements**

No problems encountered.

**6. Method Blank Requirements**

The method blanks were non-detect (<MDL) for all analytes. No problems encountered.

**7. Internal Standard(s) Response Requirements**

No problems encountered.

**8. Comments**

No problems encountered.

**I certify that this data package is in compliance with the terms and conditions of the contract. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee.**

Approved by: \_\_\_\_\_

*John W. Call*

# Anatek Labs, Inc.

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

**Batch #:** 080820024  
**Project Name:** 0808297

## Analytical Results Report

<b>Sample Number</b>	080820024-001	<b>Sampling Date</b>	8/18/2028	<b>Date/Time Received</b>	8/20/2008 10:30 AM
<b>Client Sample ID</b>	0808297-01F / MW-#8	<b>Sampling Time</b>	10:30 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.0104	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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

**Batch #:** 080820024  
**Project Name:** 0808297

## Analytical Results Report

<b>Sample Number</b>	080820024-002	<b>Sampling Date</b>	8/18/2028	<b>Date/Time Received</b>	8/20/2008 10:30 AM
<b>Client Sample ID</b>	0808297-02F / MW-#29	<b>Sampling Time</b>	11:10 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.00165	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
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**Attn:** ANDY FREEMAN

**Batch #:** 080820024  
**Project Name:** 0808297

## Analytical Results Report

<b>Sample Number</b>	080820024-003	<b>Sampling Date</b>	8/18/2008	<b>Date/Time Received</b>	8/20/2008 10:30 AM
<b>Client Sample ID</b>	0808297-04F / MW-30	<b>Sampling Time</b>	12:30 PM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
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**Attn:** ANDY FREEMAN

**Batch #:** 080820024  
**Project Name:** 0808297

## Analytical Results Report

<b>Sample Number</b>	080820024-004	<b>Sampling Date</b>	8/18/2008	<b>Date/Time Received</b>	8/20/2008 10:30 AM
<b>Client Sample ID</b>	0808297-05F / RW#1	<b>Sampling Time</b>	9:15 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 080820024  
**Project Name:** 0808297

## Analytical Results Report

<b>Sample Number</b>	080820024-005	<b>Sampling Date</b>	8/18/2008	<b>Date/Time Received</b>	8/20/2008 10:30 AM
<b>Client Sample ID</b>	0808297-06F / RW#1 FD	<b>Sampling Time</b>	9:25 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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**Attn:** ANDY FREEMAN

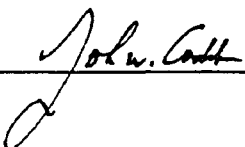
**Batch #:** 080820024  
**Project Name:** 0808297

## Analytical Results Report

<b>Sample Number</b>	080820024-006	<b>Sampling Date</b>	8/18/2008	<b>Date/Time Received</b>	8/20/2008 10:30 AM
<b>Client Sample ID</b>	0808297-07F / MW #4	<b>Sampling Time</b>	9:50 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water				

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

Authorized Signature



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

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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

**Batch #:** 080820024  
**Project Name:** 0808297

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dissolved Uranium	0.0503	mg/L	0.05	100.6	85-115	8/27/2008	8/27/2008

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
080820024-002	Dissolved Uranium	0.00165	0.0552	mg/L	0.05	107.1	75-125	8/27/2008	8/27/2008

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dissolved Uranium	0.0578	mg/L	0.05	112.3	4.6	0-20	8/27/2008	8/27/2008

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	8/27/2008

AR Acceptable Range  
ND Not Detected  
PQL Practical Quantitation Limit  
RPD Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Friday, September 05, 2008

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Printed on: 5 September 2008 14:59:39

Lab Order: 0808297  
 Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808297-01A	MW #8	8/18/2008 10:30:00 AM	Aqueous	EPA Method 8015B: Diesel Range	16847	8/21/2008	8/21/2008
				EPA Method 8015B: Gasoline Range	R29989		8/28/2008
				EPA Method 8260B: VOLATILES	R29968		8/27/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008
0808297-01B				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/24/2008
0808297-01C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R29848		8/19/2008
				EPA Method 300.0: Anions	R29848		8/19/2008
				EPA Method 300.0: Anions	R29857		8/20/2008
				SM 2320B: Alkalinity	R29883		8/22/2008
0808297-01D				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/8/2008
				EPA Method 7470: Mercury	16942	9/2/2008	9/2/2008
0808297-01E				EPA Method 6010B: Dissolved Metals	R30090		9/5/2008
				EPA Method 6010B: Dissolved Metals	R		9/8/2008
0808297-02A	MW #29	8/18/2008 11:10:00 AM		EPA Method 8015B: Diesel Range	16847	8/21/2008	8/21/2008
				EPA Method 8015B: Gasoline Range	R29989		8/28/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008
				EPA Method 8260B: VOLATILES	R29968		8/27/2008
0808297-02B				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/24/2008
0808297-02C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R29848		8/19/2008
				EPA Method 300.0: Anions	R29848		8/19/2008
				SM 2320B: Alkalinity	R29883		8/22/2008
0808297-02D				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008

# Hall Environmental Analysis Laboratory, Inc.

23-Sep-08

Lab Order: 0808297

Client: Western Refining Southwest, Inc.

Project: Refinery Wells - Annual 2008

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808297-02D	MW #29	8/18/2008 11:10:00 AM	Aqueous	EPA Method 7470: Mercury	16942	9/2/2008	9/2/2008
0808297-02E				EPA Method 6010B: Dissolved Metals	R30090		9/5/2008
				EPA Method 6010B: Dissolved Metals	R		9/8/2008
0808297-03A	Field Blank	8/18/2008 12:20:00 PM		EPA Method 8260B: VOLATILES	R29898		8/22/2008
				EPA Method 8260B: VOLATILES	R29968		8/27/2008
0808297-04A	MW #30	8/18/2008 12:30:00 PM		EPA Method 8015B: Diesel Range	16847	8/21/2008	8/21/2008
				EPA Method 8015B: Gasoline Range	R29989		8/28/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008
				EPA Method 8260B: VOLATILES	R29968		8/27/2008
0808297-04B				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/24/2008
				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/26/2008
0808297-04C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R29848		8/19/2008
				EPA Method 300.0: Anions	R29848		8/19/2008
				SM 2320B: Alkalinity	R29883		8/22/2008
0808297-04D				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA Method 7470: Mercury	16942	9/2/2008	9/2/2008
0808297-04E				EPA Method 6010B: Dissolved Metals	R30090		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30090		9/5/2008
0808297-05A	RW #1	8/18/2008 9:15:00 AM		EPA Method 8015B: Diesel Range	16847	8/21/2008	8/21/2008
				EPA Method 8015B: Gasoline Range	R29989		8/28/2008
				EPA Method 8260B: VOLATILES	R29944		8/26/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008
				EPA Method 8260B: VOLATILES	R29944		8/26/2008
0808297-05B				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/24/2008

Lab Order: 0808297  
Client: Western Refining Southwest, Inc.  
Project: Refinery Wells - Annual 2008

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808297-05B	RW #1	8/18/2008 9:15:00 AM	Aqueous	EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/25/2008
0808297-05C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R29848		8/19/2008
				EPA Method 300.0: Anions	R29848		8/20/2008
				SM 2320B: Alkalinity	R29883		8/22/2008
0808297-05D				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA Method 7470: Mercury	16942	9/2/2008	9/2/2008
0808297-05E				EPA Method 6010B: Dissolved Metals	R30090		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30090		9/5/2008
0808297-06A	RW #1 FD	8/18/2008 9:25:00 AM		EPA Method 8015B: Diesel Range	16847	8/21/2008	8/26/2008
				EPA Method 8015B: Gasoline Range	R29989		8/28/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008
				EPA Method 8260B: VOLATILES	R29944		8/26/2008
				EPA Method 8260B: VOLATILES	R29944		8/26/2008
0808297-06B				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/24/2008
				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/25/2008
0808297-06C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R29848		8/20/2008
				EPA Method 300.0: Anions	R29848		8/20/2008
				SM 2320B: Alkalinity	R29883		8/22/2008
0808297-06D				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA Method 7470: Mercury	16942	9/2/2008	9/2/2008
0808297-06E				EPA Method 6010B: Dissolved Metals	R30090		9/5/2008



# Hall Environmental Analysis Laboratory, Inc.

23-Sep-08

Lab Order: 0808297

Client: Western Refining Southwest, Inc.

Project: Refinery Wells - Annual 2008

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808297-06E	RW #1 FD	8/18/2008 9:25:00 AM	Aqueous	EPA Method 6010B: Dissolved Metals	R30090		9/5/2008
				EPA Method 6010B: Dissolved Metals	R		9/8/2008
0808297-07A	MW #4	8/18/2008 9:50:00 AM		EPA Method 8015B: Diesel Range	16847	8/21/2008	8/21/2008
				EPA Method 8015B: Gasoline Range	R29989		8/28/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008
				EPA Method 8260B: VOLATILES	R29944		8/26/2008
0808297-07B				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/24/2008
				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/25/2008
0808297-07C				Carbon Dioxide	R29886		8/22/2008
				EPA Method 300.0: Anions	R29848		8/20/2008
				EPA Method 300.0: Anions	R29848		8/20/2008
				SM 2320B: Alkalinity	R29883		8/22/2008
0808297-07D				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA Method 7470: Mercury	16942	9/2/2008	9/2/2008
0808297-07E				EPA Method 6010B: Dissolved Metals	R30090		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30090		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30090		9/5/2008
0808297-08A	TRIP BLANK		Trip Blank	EPA Method 8015B: Gasoline Range	R29989		8/28/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 300.0: Anions</b>									
<b>Sample ID: 0808297-02CMSD</b>		<i>MSD</i>							
					Batch ID: <b>R29848</b>		Analysis Date: 8/19/2008 10:25:28 PM		
Fluoride	0.7935	mg/L	0.10	86.7	65.1	121	3.04	20	
Nitrogen, Nitrite (As N)	1.242	mg/L	0.10	124	52.9	128	2.59	20	
Nitrogen, Nitrate (As N)	3.386	mg/L	0.10	95.8	83.8	112	0.433	20	
Phosphorus, Orthophosphate (As P)	4.915	mg/L	0.50	98.3	77.6	118	3.13	20	
<b>Sample ID: MB</b>		<i>MBLK</i>							
					Batch ID: <b>R29848</b>		Analysis Date: 8/19/2008 9:22:04 AM		
Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						
<b>Sample ID: MB</b>		<i>MBLK</i>							
					Batch ID: <b>R29857</b>		Analysis Date: 8/20/2008 8:34:50 AM		
Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						
<b>Sample ID: LCS</b>		<i>LCS</i>							
					Batch ID: <b>R29848</b>		Analysis Date: 8/19/2008 9:39:29 AM		
Fluoride	0.5144	mg/L	0.10	103	90	110			
Chloride	4.885	mg/L	0.10	97.7	90	110			
Nitrogen, Nitrite (As N)	1.013	mg/L	0.10	101	90	110			
Nitrogen, Nitrate (As N)	2.512	mg/L	0.10	100	90	110			
Phosphorus, Orthophosphate (As P)	4.816	mg/L	0.50	96.3	90	110			
Sulfate	10.10	mg/L	0.50	101	90	110			
<b>Sample ID: LCS</b>		<i>LCS</i>							
					Batch ID: <b>R29857</b>		Analysis Date: 8/20/2008 8:52:14 AM		
Fluoride	0.4991	mg/L	0.10	99.8	90	110			
Chloride	4.828	mg/L	0.10	96.6	90	110			
Nitrogen, Nitrite (As N)	1.003	mg/L	0.10	100	90	110			
Nitrogen, Nitrate (As N)	2.503	mg/L	0.10	100	90	110			
Phosphorus, Orthophosphate (As P)	4.815	mg/L	0.50	96.3	90	110			
Sulfate	10.03	mg/L	0.50	100	90	110			
<b>Sample ID: 0808297-02CMS</b>		<i>MS</i>							
					Batch ID: <b>R29848</b>		Analysis Date: 8/19/2008 10:08:04 PM		
Fluoride	0.7698	mg/L	0.10	82.0	65.1	121			
Nitrogen, Nitrite (As N)	1.211	mg/L	0.10	121	52.9	128			
Nitrogen, Nitrate (As N)	3.371	mg/L	0.10	95.2	83.8	112			
Phosphorus, Orthophosphate (As P)	4.764	mg/L	0.50	95.3	77.6	118			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: SM 2320B: Alkalinity</b>									
Sample ID: MB		MBLK							
					Batch ID: R29883	Analysis Date:			8/22/2008
Alkalinity, Total (As CaCO <sub>3</sub> )	ND	mg/L CaC	2.0						
Carbonate	ND	mg/L CaC	2.0						
Bicarbonate	ND	mg/L CaC	2.0						
Sample ID: LCS		LCS							
					Batch ID: R29883	Analysis Date:			8/22/2008
Alkalinity, Total (As CaCO <sub>3</sub> )	81.00	mg/L CaC	20	100	80	120			
<b>Method: EPA Method 8015B: Diesel Range</b>									
Sample ID: MB-16847		MBLK							
					Batch ID: 16847	Analysis Date:			8/21/2008 6:58:00 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-16847		LCS							
					Batch ID: 16847	Analysis Date:			8/21/2008 7:32:04 PM
Diesel Range Organics (DRO)	5.664	mg/L	1.0	113	74	157			
Sample ID: LCSD-16847		LCSD							
					Batch ID: 16847	Analysis Date:			8/21/2008 8:06:10 PM
Diesel Range Organics (DRO)	5.516	mg/L	1.0	110	74	157	2.64	23	
<b>Method: EPA Method 8015B: Gasoline Range</b>									
Sample ID: 0808297-01A-MSD		MSD							
					Batch ID: R29989	Analysis Date:			8/28/2008 5:17:51 PM
Gasoline Range Organics (GRO)	0.4432	mg/L	0.050	88.6	80	115	1.04	8.39	
Sample ID: 5ML RB		MBLK							
					Batch ID: R29989	Analysis Date:			8/28/2008 9:10:51 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Sample ID: LCS-GRO		LCS							
					Batch ID: R29989	Analysis Date:			8/28/2008 5:48:03 PM
Gasoline Range Organics (GRO)	0.4892	mg/L	0.050	97.8	80	115			
Sample ID: 0808297-01A-MS		MS							
					Batch ID: R29989	Analysis Date:			8/28/2008 4:47:28 PM
Gasoline Range Organics (GRO)	0.4386	mg/L	0.050	87.7	80	115			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29898 Analysis Date: 8/22/2008 9:00:38 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29898 Analysis Date: 8/22/2008 9:00:38 AM

4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	3.025	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5

Sample ID: b3

MBLK

Batch ID: R29898 Analysis Date: 8/22/2008 9:46:24 PM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b3

MBLK

Batch ID: R29898 Analysis Date: 8/22/2008 9:46:24 PM

Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5

Sample ID: 5ml rb

MBLK

Batch ID: R29944 Analysis Date: 8/26/2008 9:10:18 AM

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29944 Analysis Date: 8/26/2008 9:10:18 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29944 Analysis Date: 8/26/2008 9:10:18 AM

4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5

Sample ID: b8

MBLK

Batch ID: R29944 Analysis Date: 8/26/2008 11:56:52 PM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b8	MBLK	Batch ID: R29944	Analysis Date: 8/26/2008 11:56:52 PM
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5
Sample ID: 5ml rb	MBLK	Batch ID: R29968	Analysis Date: 8/27/2008 1:41:36 PM

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29968 Analysis Date: 8/27/2008 1:41:36 PM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29968 Analysis Date: 8/27/2008 1:41:36 PM

4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5

Sample ID: b4

MBLK

Batch ID: R29968 Analysis Date: 8/28/2008 1:47:54 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b4

MBLK

Batch ID: R29968 Analysis Date: 8/28/2008 1:47:54 AM

Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5

Sample ID: 100ng lcs

LCS

Batch ID: R29898 Analysis Date: 8/22/2008 10:07:58 AM

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 8260B: VOLATILES</b>									
<b>Sample ID: 100ng lcs</b>		<b>LCS</b>			<b>Batch ID: R29898</b>		<b>Analysis Date: 8/22/2008 10:07:58 AM</b>		
Benzene	21.36	µg/L	1.0	107	86.8	120			
Toluene	20.15	µg/L	1.0	101	64.1	127			
Chlorobenzene	22.26	µg/L	1.0	111	82.4	113			
1,1-Dichloroethene	24.50	µg/L	1.0	122	86.5	132			
Trichloroethene (TCE)	20.02	µg/L	1.0	100	77.3	123			
<b>Sample ID: 100ng lcs</b>		<b>LCS</b>			<b>Batch ID: R29898</b>		<b>Analysis Date: 8/22/2008 10:43:56 PM</b>		
Benzene	21.89	µg/L	1.0	109	86.8	120			
Toluene	20.01	µg/L	1.0	100	64.1	127			
Chlorobenzene	21.91	µg/L	1.0	110	82.4	113			
1,1-Dichloroethene	25.21	µg/L	1.0	126	86.5	132			
Trichloroethene (TCE)	20.05	µg/L	1.0	100	77.3	123			
<b>Sample ID: 100ng lcs</b>		<b>LCS</b>			<b>Batch ID: R29944</b>		<b>Analysis Date: 8/26/2008 10:22:08 AM</b>		
Benzene	19.59	µg/L	1.0	97.9	86.8	120			
Toluene	20.66	µg/L	1.0	103	64.1	127			
Chlorobenzene	22.08	µg/L	1.0	110	82.4	113			
1,1-Dichloroethene	24.66	µg/L	1.0	123	86.5	132			
Trichloroethene (TCE)	19.33	µg/L	1.0	96.7	77.3	123			
<b>Sample ID: 100ng lcs</b>		<b>LCS</b>			<b>Batch ID: R29944</b>		<b>Analysis Date: 8/27/2008 1:08:33 AM</b>		
Benzene	20.49	µg/L	1.0	102	86.8	120			
Toluene	20.66	µg/L	1.0	103	64.1	127			
Chlorobenzene	23.33	µg/L	1.0	117	82.4	113			S
1,1-Dichloroethene	25.11	µg/L	1.0	126	86.5	132			
Trichloroethene (TCE)	21.06	µg/L	1.0	105	77.3	123			
<b>Sample ID: 100ng lcs</b>		<b>LCS</b>			<b>Batch ID: R29968</b>		<b>Analysis Date: 8/27/2008 2:38:58 PM</b>		
Benzene	21.89	µg/L	1.0	109	86.8	120			
Toluene	20.00	µg/L	1.0	100	64.1	127			
Chlorobenzene	22.59	µg/L	1.0	113	82.4	113			
1,1-Dichloroethene	24.83	µg/L	1.0	124	86.5	132			
Trichloroethene (TCE)	21.09	µg/L	1.0	105	77.3	123			
<b>Sample ID: 100ng lcs</b>		<b>LCS</b>			<b>Batch ID: R29968</b>		<b>Analysis Date: 8/28/2008 2:45:23 AM</b>		
Benzene	21.80	µg/L	1.0	109	86.8	120			
Toluene	20.36	µg/L	1.0	102	64.1	127			
Chlorobenzene	22.04	µg/L	1.0	110	82.4	113			
1,1-Dichloroethene	24.09	µg/L	1.0	120	86.5	132			
Trichloroethene (TCE)	19.55	µg/L	1.0	97.8	77.3	123			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16839

MBLK

Batch ID: 16839 Analysis Date: 8/24/2008

Acenaphthene	ND	µg/L	10
Acenaphthylene	ND	µg/L	10
Aniline	ND	µg/L	10
Anthracene	ND	µg/L	10
Azobenzene	ND	µg/L	10
Benz(a)anthracene	ND	µg/L	10
Benzo(a)pyrene	ND	µg/L	10
Benzo(b)fluoranthene	ND	µg/L	10
Benzo(g,h,i)perylene	ND	µg/L	10
Benzo(k)fluoranthene	ND	µg/L	10
Benzoic acid	ND	µg/L	20
Benzyl alcohol	ND	µg/L	10
Bis(2-chloroethoxy)methane	ND	µg/L	10
Bis(2-chloroethyl)ether	ND	µg/L	10
Bis(2-chloroisopropyl)ether	ND	µg/L	10
Bis(2-ethylhexyl)phthalate	ND	µg/L	10
4-Bromophenyl phenyl ether	ND	µg/L	10
Butyl benzyl phthalate	ND	µg/L	10
Carbazole	ND	µg/L	10
4-Chloro-3-methylphenol	ND	µg/L	10
4-Chloroaniline	ND	µg/L	10
2-Chloronaphthalene	ND	µg/L	10
2-Chlorophenol	ND	µg/L	10
4-Chlorophenyl phenyl ether	ND	µg/L	10
Chrysene	ND	µg/L	10
Di-n-butyl phthalate	ND	µg/L	10
Di-n-octyl phthalate	ND	µg/L	10
Dibenz(a,h)anthracene	ND	µg/L	10
Dibenzofuran	ND	µg/L	10
1,2-Dichlorobenzene	ND	µg/L	10
1,3-Dichlorobenzene	ND	µg/L	10
1,4-Dichlorobenzene	ND	µg/L	10
3,3'-Dichlorobenzidine	ND	µg/L	10
Diethyl phthalate	ND	µg/L	10
Dimethyl phthalate	ND	µg/L	10
2,4-Dichlorophenol	ND	µg/L	20
2,4-Dimethylphenol	ND	µg/L	10
4,6-Dinitro-2-methylphenol	ND	µg/L	20
2,4-Dinitrophenol	ND	µg/L	20
2,4-Dinitrotoluene	ND	µg/L	10
2,6-Dinitrotoluene	ND	µg/L	10
Fluoranthene	ND	µg/L	10
Fluorene	ND	µg/L	10
Hexachlorobenzene	ND	µg/L	10

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16839

MBLK

Batch ID: 16839

Analysis Date:

8/24/2008

Hexachlorobutadiene	ND	µg/L	10
Hexachlorocyclopentadiene	ND	µg/L	10
Hexachloroethane	ND	µg/L	10
Indeno(1,2,3-cd)pyrene	ND	µg/L	10
Isophorone	ND	µg/L	10
2-Methylnaphthalene	ND	µg/L	10
2-Methylphenol	ND	µg/L	10
3+4-Methylphenol	ND	µg/L	10
N-Nitrosodi-n-propylamine	ND	µg/L	10
N-Nitrosodimethylamine	ND	µg/L	10
N-Nitrosodiphenylamine	ND	µg/L	10
Naphthalene	ND	µg/L	10
2-Nitroaniline	ND	µg/L	10
3-Nitroaniline	ND	µg/L	10
4-Nitroaniline	ND	µg/L	10
Nitrobenzene	ND	µg/L	10
2-Nitrophenol	ND	µg/L	10
4-Nitrophenol	ND	µg/L	10
Pentachlorophenol	ND	µg/L	40
Phenanthrene	ND	µg/L	10
Phenol	ND	µg/L	10
Pyrene	ND	µg/L	10
Pyridine	ND	µg/L	10
1,2,4-Trichlorobenzene	ND	µg/L	10
2,4,5-Trichlorophenol	ND	µg/L	10
2,4,6-Trichlorophenol	ND	µg/L	10

Sample ID: lcs-16839

LCS

Batch ID: 16839

Analysis Date:

8/24/2008

Acenaphthene	58.44	µg/L	10	58.4	11	123
4-Chloro-3-methylphenol	114.2	µg/L	10	56.2	15.4	119
2-Chlorophenol	101.3	µg/L	10	49.7	12.2	122
1,4-Dichlorobenzene	46.86	µg/L	10	46.9	16.9	100
2,4-Dinitrotoluene	58.54	µg/L	10	58.5	13	138
N-Nitrosodi-n-propylamine	61.86	µg/L	10	61.9	9.93	122
4-Nitrophenol	72.66	µg/L	10	36.3	12.5	87.4
Pentachlorophenol	126.3	µg/L	40	63.2	3.55	114
Phenol	57.74	µg/L	10	28.9	7.53	73.1
Pyrene	64.38	µg/L	10	64.4	12.6	140
1,2,4-Trichlorobenzene	50.96	µg/L	10	51.0	17.4	98.7

Sample ID: lcsd-16839

LCSD

Batch ID: 16839

Analysis Date:

8/24/2008

Acenaphthene	64.70	µg/L	10	64.7	11	123	10.2	30.5
4-Chloro-3-methylphenol	142.0	µg/L	10	70.1	15.4	119	21.7	28.6
2-Chlorophenol	129.7	µg/L	10	63.9	12.2	122	24.6	107
1,4-Dichlorobenzene	55.12	µg/L	10	55.1	16.9	100	16.2	62.1
2,4-Dinitrotoluene	63.90	µg/L	10	63.9	13	138	8.76	14.7

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 8270C: Semivolatiles</b>									
Sample ID: lcsd-16839		LCSD			Batch ID: 16839		Analysis Date:		8/24/2008
N-Nitrosodi-n-propylamine	71.76	µg/L	10	71.8	9.93	122	14.8	30.3	
4-Nitrophenol	83.46	µg/L	10	41.7	12.5	87.4	13.8	36.3	
Pentachlorophenol	143.3	µg/L	40	71.7	3.55	114	12.6	49	
Phenol	78.56	µg/L	10	39.3	7.53	73.1	30.6	52.4	
Pyrene	74.56	µg/L	10	74.6	12.6	140	14.7	16.3	
1,2,4-Trichlorobenzene	57.44	µg/L	10	57.4	17.4	98.7	12.0	36.4	

**Method: EPA Method 7470: Mercury**

Sample ID: MB-16942		MBLK			Batch ID: 16942		Analysis Date:		9/2/2008 1:57:14 PM
Mercury	ND	mg/L	0.00020						
Sample ID: LCS-16942		LCS			Batch ID: 16942		Analysis Date:		9/2/2008 1:58:59 PM
Mercury	0.004755	mg/L	0.00020	95.1	80	120			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

**Client:** Western Refining Southwest, Inc.  
**Project:** Refinery Wells - Annual 2008

**Work Order:** 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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**Method:** EPA Method 6010B: Dissolved Metals

Sample ID: 0808297-07EMSD		MSD			Batch ID: R30090		Analysis Date: 9/5/2008 12:26:36 PM	
Arsenic	0.5511	mg/L	0.020	110	75	125	6.47	20
Cadmium	0.5230	mg/L	0.0020	105	75	125	5.68	20
Chromium	0.5214	mg/L	0.0060	104	75	125	5.82	20
Copper	0.5637	mg/L	0.0060	112	75	125	6.82	20
Lead	0.4984	mg/L	0.0050	98.9	75	125	4.95	20
Silver	0.4870	mg/L	0.0050	97.4	75	125	6.39	20
Zinc	0.5575	mg/L	0.050	104	75	125	5.03	20

Sample ID: 0808297-07EMSD			MSD		Batch ID: R30090		Analysis Date: 9/5/2008 1:55:56 PM	
Barium	3.593	mg/L	0.10	90.2	75	125	0.616	20
Selenium	2.523	mg/L	0.25	101	75	125	0.670	20

<b>Sample ID:</b> MB	<b>MBLK</b>				<b>Batch ID:</b> R	<b>Analysis Date:</b> 4/30/2008 9:19:40 AM
Arsenic	ND	mg/L	0.020			
Barium	ND	mg/L	0.020			
Cadmium	ND	mg/L	0.0020			
Chromium	ND	mg/L	0.0060			
Copper	ND	mg/L	0.0060			
Iron	ND	mg/L	0.020			
Lead	ND	mg/L	0.0050			
Manganese	ND	mg/L	0.0020			
Selenium	ND	mg/L	0.050			
Silver	ND	mg/L	0.0050			
Zinc	ND	mg/L	0.050			

<b>Sample ID:</b> MBLK	<b>MBLK</b>				<b>Batch ID:</b> R	<b>Analysis Date:</b> 6/25/2008 3:24:59 PM
Arsenic	ND	mg/L	0.020			
Barium	ND	mg/L	0.020			
Cadmium	ND	mg/L	0.0020			
Chromium	ND	mg/L	0.0060			
Copper	ND	mg/L	0.0060			
Iron	ND	mg/L	0.020			
Lead	ND	mg/L	0.0050			
Manganese	ND	mg/L	0.0020			
Selenium	ND	mg/L	0.050			
Silver	ND	mg/L	0.0050			
Zinc	ND	mg/L	0.050			

<b>Sample ID:</b> MB	<b>MBLK</b>				<b>Batch ID:</b> R30090	<b>Analysis Date:</b> 9/5/2008 11:35:22 AM
Arsenic	ND	mg/L	0.020			
Barium	ND	mg/L	0.020			
Cadmium	ND	mg/L	0.0020			
Chromium	ND	mg/L	0.0060			
Copper	ND	mg/L	0.0060			
Iron	ND	mg/L	0.020			
Lead	ND	mg/L	0.0050			
Manganese	ND	mg/L	0.0020			

**Qualifiers:**

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells - Annual 2008

Work Order: 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 6010B: Dissolved Metals</b>									
<b>Sample ID: MB</b>		<b>MBLK</b>							
					<b>Batch ID: R30090</b>		<b>Analysis Date:</b>		<b>9/5/2008 11:35:22 AM</b>
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						
Zinc	ND	mg/L	0.050						
<b>Sample ID: LCS</b>		<b>LCS</b>							
					<b>Batch ID:</b>	<b>R</b>	<b>Analysis Date:</b>		<b>4/30/2008 9:22:42 AM</b>
Arsenic	0.5348	mg/L	0.020	107	80	120			
Barium	0.5362	mg/L	0.020	107	80	120			
Cadmium	0.5444	mg/L	0.0020	109	80	120			
Chromium	0.5356	mg/L	0.0060	107	80	120			
Copper	0.5334	mg/L	0.0060	107	80	120			
Iron	0.5420	mg/L	0.020	108	80	120			
Lead	0.5346	mg/L	0.0050	107	80	120			
Manganese	0.5326	mg/L	0.0020	107	80	120			
Selenium	0.5310	mg/L	0.050	106	80	120			
Silver	0.5409	mg/L	0.0050	108	80	120			
Zinc	0.5359	mg/L	0.050	107	80	120			
<b>Sample ID: LCS</b>		<b>LCS</b>							
					<b>Batch ID:</b>	<b>R</b>	<b>Analysis Date:</b>		<b>6/25/2008 3:30:49 PM</b>
Arsenic	0.5195	mg/L	0.020	104	80	120			
Barium	0.5029	mg/L	0.020	101	80	120			
Cadmium	0.5084	mg/L	0.0020	102	80	120			
Chromium	0.5059	mg/L	0.0060	101	80	120			
Copper	0.4906	mg/L	0.0060	98.1	80	120			
Iron	0.5204	mg/L	0.020	104	80	120			
Lead	0.5068	mg/L	0.0050	101	80	120			
Manganese	0.4978	mg/L	0.0020	99.6	80	120			
Selenium	0.4864	mg/L	0.050	97.3	80	120			
Silver	0.5139	mg/L	0.0050	103	80	120			
Zinc	0.5138	mg/L	0.050	103	80	120			
<b>Sample ID: LCS</b>		<b>LCS</b>							
					<b>Batch ID: R30090</b>		<b>Analysis Date:</b>		<b>9/5/2008 11:38:21 AM</b>
Arsenic	0.4961	mg/L	0.020	99.2	80	120			
Barium	0.4826	mg/L	0.020	96.5	80	120			
Cadmium	0.4964	mg/L	0.0020	99.3	80	120			
Chromium	0.4885	mg/L	0.0060	97.7	80	120			
Copper	0.4819	mg/L	0.0060	96.4	80	120			
Iron	0.4808	mg/L	0.020	96.2	80	120			
Lead	0.4835	mg/L	0.0050	96.7	80	120			
Manganese	0.4788	mg/L	0.0020	95.8	80	120			
Selenium	0.4809	mg/L	0.050	96.2	80	120			
Silver	0.4876	mg/L	0.0050	97.5	80	120			
Zinc	0.4903	mg/L	0.050	98.1	80	120			
<b>Sample ID: 0808297-07EMS</b>		<b>MS</b>							
					<b>Batch ID: R30090</b>		<b>Analysis Date:</b>		<b>9/5/2008 12:13:04 PM</b>
Arsenic	0.5166	mg/L	0.020	103	75	125			
Cadmium	0.4941	mg/L	0.0020	98.8	75	125			
Chromium	0.4919	mg/L	0.0060	98.4	75	125			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

**Client:** Western Refining Southwest, Inc.  
**Project:** Refinery Wells - Annual 2008

**Work Order:** 0808297

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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**Method:** EPA Method 6010B: Dissolved Metals

**Sample ID:** 0808297-07EMS **MS** **Batch ID:** R30090 **Analysis Date:** 9/5/2008 12:13:04 PM

Copper	0.5265	mg/L	0.0060	104	75	125			
Lead	0.4743	mg/L	0.0050	94.1	75	125			
Silver	0.4568	mg/L	0.0050	91.4	75	125			
Zinc	0.5301	mg/L	0.050	98.5	75	125			

**Sample ID:** 0808297-07EMS **MS** **Batch ID:** R30090 **Analysis Date:** 9/5/2008 1:53:10 PM

Barium	3.615	mg/L	0.10	91.1	75	125			
Selenium	2.506	mg/L	0.25	100	75	125			

**Method:** EPA 6010B: Total Recoverable Metals

**Sample ID:** MB-16920 **MBLK** **Batch ID:** 16920 **Analysis Date:** 9/3/2008 2:05:00 PM

Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.010						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						

**Sample ID:** LCS-16920 **LCS** **Batch ID:** 16920 **Analysis Date:** 9/3/2008 2:07:22 PM

Arsenic	0.5251	mg/L	0.020	105	80	120			
Barium	0.4887	mg/L	0.010	97.7	80	120			
Cadmium	0.4999	mg/L	0.0020	100	80	120			
Chromium	0.5075	mg/L	0.0060	102	80	120			
Lead	0.4964	mg/L	0.0050	99.3	80	120			
Selenium	0.4892	mg/L	0.050	97.8	80	120			
Silver	0.5013	mg/L	0.0050	100	80	120			

**Qualifiers:**

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

## Login Report

Customer Name: HALL ENVIRONMENTAL ANALYSIS LAB

Order ID: 080820024

Purchase Order:

Order Date: 8/20/2008

Project ID:

Project Name: 0808297

Comment:

Sample #:	080820024-001	Customer Sample #:	0808297-01F / MW-#8	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/18/2008
Quantity:	1	Matrix:	Water	Date Received:	8/20/2008 10:30:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	9/2/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080820024-002	Customer Sample #:	0808297-02F / MW-#29	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/18/2008
Quantity:	1	Matrix:	Water	Date Received:	8/20/2008 10:30:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	9/2/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080820024-003	Customer Sample #:	0808297-04F / MW-30	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/18/2008
Quantity:	1	Matrix:	Water	Date Received:	8/20/2008 10:30:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	9/2/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080820024-004	Customer Sample #:	0808297-05F / RW#1	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/18/2008
Quantity:	1	Matrix:	Water	Date Received:	8/20/2008 10:30:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	9/2/2008	<u>Normal (6-10 Days)</u>	

Customer Name: HALL ENVIRONMENTAL ANALYSIS LAB

Order ID: 080820024

Purchase Order:

Order Date: 8/20/2008

Project ID:

Project Name: 0808297

Comment:

Sample #: 080820024-005 Customer Sample #: 0808297-06F / RW#1 FD Site:

Recv'd: ☒ Collector: Date Collected: 8/18/2008  
Quantity: 1 Matrix: Water Date Received: 8/20/2008 10:30:00 A  
Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	9/2/2008	<u>Normal (6-10 Days)</u>

Sample #: 080820024-006 Customer Sample #: 0808297-07F / MW #4 Site:

Recv'd: ☒ Collector: Date Collected: 8/18/2008  
Quantity: 1 Matrix: Water Date Received: 8/20/2008 10:30:00 A  
Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	9/2/2008	<u>Normal (6-10 Days)</u>

### SAMPLE CONDITION RECORD

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature inside the cooler?	1.5
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	N/A
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes

Hall Environmental Analysis Laboratory, Inc.  
4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109-4372  
TEL: 5053453975 FAX: 5053454107

**CHAIN-OF-CUSTODY**  
808297

080820 024 **HALE** Last Due 9/2/2008  
1st SAMP 8/18/2008 1st RCVD 8/20/2008

**Subcontractor:**

Anatek Labs, Inc.  
1282 Alturas Dr  
Moscow, ID 83843

TEL: (208) 883-2839  
FAX: (208) 882-9246  
Accl #:

Project Name: 0808297

19-Aug-08

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0808297-01F	MW-#8	Aqueous	8/18/2008 10:30:00 AM	125HDPHNO3	SEE BELOW
0808297-02F	MW-#29	Aqueous	8/18/2008 11:10:00 AM	125HDPHNO3	SEE BELOW
0808297-04F	MW-30	Aqueous	8/18/2008 12:30:00 PM	125HDPHNO3	SEE BELOW
0808297-05F	RW#1	Aqueous	8/18/2008 9:15:00 AM	125HDPHNO3	SEE BELOW
0808297-06F	RW#1 FD	Aqueous	8/18/2008 9:25:00 AM	125HDPHNO3	SEE BELOW
0808297-07F	MW-#4	Aqueous	8/18/2008 9:50:00 AM	125HDPHNO3	SEE BELOW

**ANALYTICAL COMMENTS:** LEVEL 4 QA/QC FOR DISSOLVED U BY 6020, PLEASE REPORT @ 0.001 mg/L

MWBS

Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

**ANATEK LABS RECEIVING LIST**

Date/Time

TEMP. 15 °C

☒ RECEIVED INTACT  
☒ LABELS & CHAINS AGREE  
☒ NO HEADSPACE  
☒ PRESERVATIVE

NUMBER OF CONTAINERS: 6

SHIPPED VIA

INSPECTED BY: *dm*

DATE & TIME: 8/20/08 11:30

Relinquished by: *JS*

Recei

8/19/08-1042

Recei

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/19/2008

Work Order Number 0808297

Received by: TLS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☒

No ☐

N/A ☐

Water - pH acceptable upon receipt?

Yes ☒

No ☒

N/A ☐

Container/Temp Blank temperature?

4°

TS 8/19/08  
<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Added 1ml HNO<sub>3</sub> to head #4D + 7D to get to acceptable pH. TS 8/19/08

per C&T Level 4 QC / AT 8/21/08

Corrective Action

**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.345.4107  
[www.hallenvironmental.com](http://www.hallenvironmental.com)

QA/QC Package: ☒ 12/10  
Std ☐ Level 4 ☒

Other:

Project Name:

Refinery Wells-  
Annual 2008

Project #:

Project Manager:

Sampler Bd

Sample Temperature:

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative			HEAL No.
					HgCl <sub>2</sub>	HNO <sub>3</sub>		
8-18-08	1030A	H <sub>2</sub> O	MW#8	6-Var			H <sub>2</sub> O	0808297
/	/	/	/	1-liter Amber				1
/	/	/	/	1-250		X		1
/	/	/	/	1-500		X		1
/	/	/	/	1-500				1
/	/	/	/	1-250			H <sub>2</sub> SO <sub>4</sub>	1
8-18-08	1110A	H <sub>2</sub> O	MW#29	6-Var			H <sub>2</sub> O	2
/	/	/	/	1-liter Amber				2
/	/	/	/	1-250		X		2
/	/	/	/	1-500		X		2
/	/	/	/	1-500				2
/	/	/	/	1-250			H <sub>2</sub> SO <sub>4</sub>	2

Date: 3/18/08	Time: 1:05pm	Relinquished By: (Signature) <i>[Signature]</i>	Received By: (Signature) <i>[Signature]</i>
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 10:20

# ANALYSIS REQUEST

[illegible]

Remarks:



# CHAIN-OF-CUSTODY RECORD

Client: Western Refining - Bloomfield

Address: #50 Rd/4990

Bloomfield, NM 87413

Phone #: 505-632-4161

Fax #: 505-632-3911

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative	HEAL No.
					HgCl <sub>2</sub>	HNO <sub>3</sub>
8-18-08	1200	H <sub>2</sub> O	Field Blank	3-VOL		
8-18-08	1230	H <sub>2</sub> O	MW #30	6-VOL		
				1-Liter Amber		
				1-250ml	X	
				1-500ml	X	
				1-500ml		
				1-250ml		

Date: <u>8-18-08</u>	Time: <u>1000</u>	Relinquished By: (Signature) <u>Cindy Quintana</u>	Received By: (Signature) <u>8/19/08</u>
Date: <u>8-18-08</u>	Time: <u>1000</u>	Relinquished By: (Signature) <u>Cindy Quintana</u>	Received By: (Signature) <u>8/19/08</u>

QA/QC Package: PC8121108

Std ☐ Level 4 ☒

Other: \_\_\_\_\_

Project Name: Refinery Wells - Annual 2008

Project #: \_\_\_\_\_

Project Manager: \_\_\_\_\_

Sampler: Bob/Cindy

Sample Temperature: 4



**HALL ENVIRONMENTAL ANALYSIS LABORATORY**  
 4901 Hawkins NE, Suite D  
 Albuquerque, New Mexico 87109  
 Tel: 505.345.3975 Fax 505.345.4107  
 www.hallenvironmental.com

## ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	
BTEX + MTBE + TPH (Gasoline Only)	
TPH Method 8015B (Gas/Diesel)	
TPH (Method 418.1)	
EDB (Method 504.1)	
EDC (Method 8021)	
8310 (PNA or PAH)	
RCRA 8 Metals	
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	
8081 Pesticides / PCB's (8082)	
8260B (VOA)	X
8270 (Semi-VOA)	X
Dissolved Metals - Wacc	
RCRA 8 Metals	
(Cd, Alkalinity)	
Amion 5	
Air Bubbles or Headspace (Y or N)	

Remarks:

**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.34  
[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.34  
[www.hallenviroental.com](http://www.hallenviroental.com)

Project #:

1970

Project Manager:

Sampler: Bob/Cindy

Sample Temperature: 7

Number/Volume

6. VOA	HU
--------	----

1-liter Amber

1.250 ml	X
----------	---

1-500 ml	X
1 ml	

1-500mL	4250
1-750mL	4250

1	250mA		HEL
	6-VDA		

1-1-liter Amber			
-----------------	--	--	--

	X	JW052-1
--	---	---------

15005-1	X
---------	---

1-500 nL	4x0
1-200	4x0

Rec	
-----	--

Rec	

Rec	
-----	--

Remarks:

# ANALYSIS REQUEST

[illegible]

Remarks:





## COVER LETTER

Monday, September 29, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: Refinery Wells Annual 2008

Order No.: 0808316

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 6 sample(s) on 8/20/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

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

Andy Freeman, Business Manager

Nancy McDuffie, Laboratory Manager

NM Lab # NM9425

AZ license # AZ0682

ORELAP Lab # NM100001

Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Refinery Wells Annual 2008  
**Lab Order:** 0808316

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808316-01A	RW #23	16847	EPA Method 8015B: Diesel Range	8/19/2008 10:00:00 AM
0808316-01A	RW #23	R29944	EPA Method 8260B: VOLATILES	8/19/2008 10:00:00 AM
0808316-01A	RW #23	R29968	EPA Method 8260B: VOLATILES	8/19/2008 10:00:00 AM
0808316-01A	RW #23	R29989	EPA Method 8015B: Gasoline Range	8/19/2008 10:00:00 AM
0808316-01A	RW #23	R29898	EPA Method 8260B: VOLATILES	8/19/2008 10:00:00 AM
0808316-01B	RW #23	16839	EPA Method 8270C: Semivolatiles	8/19/2008 10:00:00 AM
0808316-01B	RW #23	16839	EPA Method 8270C: Semivolatiles	8/19/2008 10:00:00 AM
0808316-01C	RW #23	R29875	EPA Method 300.0: Anions	8/19/2008 10:00:00 AM
0808316-01C	RW #23	R29984	SM 2320B: Alkalinity	8/19/2008 10:00:00 AM
0808316-01C	RW #23	R29875	EPA Method 300.0: Anions	8/19/2008 10:00:00 AM
0808316-01C	RW #23	R29985	Carbon Dioxide	8/19/2008 10:00:00 AM
0808316-01D	RW #23	16942	EPA Method 7470: Mercury	8/19/2008 10:00:00 AM
0808316-01D	RW #23	16920	EPA 6010B: Total Recoverable Metals	8/19/2008 10:00:00 AM
0808316-01D	RW #23	16920	EPA 6010B: Total Recoverable Metals	8/19/2008 10:00:00 AM
0808316-01E	RW #23	R30098	EPA Method 6010B: Dissolved Metals	8/19/2008 10:00:00 AM
0808316-01E	RW #23	R30098	EPA Method 6010B: Dissolved Metals	8/19/2008 10:00:00 AM
0808316-01E	RW #23	R30124	EPA Method 6010B: Dissolved Metals	8/19/2008 10:00:00 AM
0808316-02A	MW #44	R29898	EPA Method 8260B: VOLATILES	8/19/2008 10:25:00 AM
0808316-02A	MW #44	R29989	EPA Method 8015B: Gasoline Range	8/19/2008 10:25:00 AM
0808316-02A	MW #44	16847	EPA Method 8015B: Diesel Range	8/19/2008 10:25:00 AM
0808316-02B	MW #44	16839	EPA Method 8270C: Semivolatiles	8/19/2008 10:25:00 AM
0808316-02C	MW #44	R29875	EPA Method 300.0: Anions	8/19/2008 10:25:00 AM
0808316-02C	MW #44	R29875	EPA Method 300.0: Anions	8/19/2008 10:25:00 AM
0808316-02C	MW #44	R29899	EPA Method 300.0: Anions	8/19/2008 10:25:00 AM
0808316-02C	MW #44	R29984	SM 2320B: Alkalinity	8/19/2008 10:25:00 AM
0808316-02C	MW #44	R29985	Carbon Dioxide	8/19/2008 10:25:00 AM
0808316-02D	MW #44	16942	EPA Method 7470: Mercury	8/19/2008 10:25:00 AM
0808316-02D	MW #44	16920	EPA 6010B: Total Recoverable Metals	8/19/2008 10:25:00 AM
0808316-02E	MW #44	R30098	EPA Method 6010B: Dissolved Metals	8/19/2008 10:25:00 AM
0808316-02E	MW #44	R30124	EPA Method 6010B: Dissolved Metals	8/19/2008 10:25:00 AM
0808316-02E	MW #44	R30098	EPA Method 6010B: Dissolved Metals	8/19/2008 10:25:00 AM
0808316-03A	RW #15	R29898	EPA Method 8260B: VOLATILES	8/19/2008 11:05:00 AM
0808316-03A	RW #15	16847	EPA Method 8015B: Diesel Range	8/19/2008 11:05:00 AM
0808316-03A	RW #15	R29944	EPA Method 8260B: VOLATILES	8/19/2008 11:05:00 AM
0808316-03A	RW #15	R29989	EPA Method 8015B: Gasoline Range	8/19/2008 11:05:00 AM
0808316-03B	RW #15	16839	EPA Method 8270C: Semivolatiles	8/19/2008 11:05:00 AM
0808316-03B	RW #15	16839	EPA Method 8270C: Semivolatiles	8/19/2008 11:05:00 AM
0808316-03C	RW #15	R29875	EPA Method 300.0: Anions	8/19/2008 11:05:00 AM

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Refinery Wells Annual 2008  
**Lab Order:** 0808316

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808316-03C	RW #15	R29875	EPA Method 300.0: Anions	8/19/2008 11:05:00 AM
0808316-03C	RW #15	R29984	SM 2320B: Alkalinity	8/19/2008 11:05:00 AM
0808316-03C	RW #15	R29985	Carbon Dioxide	8/19/2008 11:05:00 AM
0808316-03D	RW #15	16942	EPA Method 7470: Mercury	8/19/2008 11:05:00 AM
0808316-03D	RW #15	16920	EPA 6010B: Total Recoverable Metals	8/19/2008 11:05:00 AM
0808316-03D	RW #15	16920	EPA 6010B: Total Recoverable Metals	8/19/2008 11:05:00 AM
0808316-03E	RW #15	R30098	EPA Method 6010B: Dissolved Metals	8/19/2008 11:05:00 AM
0808316-03E	RW #15	R30098	EPA Method 6010B: Dissolved Metals	8/19/2008 11:05:00 AM
0808316-03E	RW #15	R30124	EPA Method 6010B: Dissolved Metals	8/19/2008 11:05:00 AM
0808316-04A	MW #40	R29989	EPA Method 8015B: Gasoline Range	8/19/2008 11:20:00 AM
0808316-04A	MW #40	R29898	EPA Method 8260B: VOLATILES	8/19/2008 11:20:00 AM
0808316-04A	MW #40	16847	EPA Method 8015B: Diesel Range	8/19/2008 11:20:00 AM
0808316-04A	MW #40	R29944	EPA Method 8260B: VOLATILES	8/19/2008 11:20:00 AM
0808316-04A	MW #40	R29944	EPA Method 8260B: VOLATILES	8/19/2008 11:20:00 AM
0808316-04A	MW #40	R29968	EPA Method 8260B: VOLATILES	8/19/2008 11:20:00 AM
0808316-04A	MW #40	R29976	EPA Method 8260B: VOLATILES	8/19/2008 11:20:00 AM
0808316-04B	MW #40	16839	EPA Method 8270C: Semivolatiles	8/19/2008 11:20:00 AM
0808316-04B	MW #40	16839	EPA Method 8270C: Semivolatiles	8/19/2008 11:20:00 AM
0808316-04C	MW #40	R29875	EPA Method 300.0: Anions	8/19/2008 11:20:00 AM
0808316-04C	MW #40	R29875	EPA Method 300.0: Anions	8/19/2008 11:20:00 AM
0808316-04C	MW #40	R29984	SM 2320B: Alkalinity	8/19/2008 11:20:00 AM
0808316-04C	MW #40	R29985	Carbon Dioxide	8/19/2008 11:20:00 AM
0808316-04D	MW #40	16920	EPA 6010B: Total Recoverable Metals	8/19/2008 11:20:00 AM
0808316-04D	MW #40	16942	EPA Method 7470: Mercury	8/19/2008 11:20:00 AM
0808316-04D	MW #40	16920	EPA 6010B: Total Recoverable Metals	8/19/2008 11:20:00 AM
0808316-04E	MW #40	R30131	EPA Method 6010B: Dissolved Metals	8/19/2008 11:20:00 AM
0808316-04E	MW #40	R30124	EPA Method 6010B: Dissolved Metals	8/19/2008 11:20:00 AM
0808316-04E	MW #40	R30098	EPA Method 6010B: Dissolved Metals	8/19/2008 11:20:00 AM
0808316-04E	MW #40	R30098	EPA Method 6010B: Dissolved Metals	8/19/2008 11:20:00 AM
0808316-04E	MW #40	R30098	EPA Method 6010B: Dissolved Metals	8/19/2008 11:20:00 AM
0808316-05A	Field Blank	R29898	EPA Method 8260B: VOLATILES	8/19/2008 10:40:00 AM
0808316-05A	Field Blank	R29989	EPA Method 8015B: Gasoline Range	8/19/2008 10:40:00 AM
0808316-06A	Trip Blank	R29989	EPA Method 8015B: Gasoline Range	
0808316-06A	Trip Blank	R29898	EPA Method 8260B: VOLATILES	

**Hall Environmental Analysis Laboratory, Inc.**

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Refinery Wells Annual 2008  
**Lab Order:** 0808316

**CASE NARRATIVE**

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: RW #23

Lab Order: 0808316

Collection Date: 8/19/2008 10:00:00 AM

Project: Refinery Wells Annual 2008

Date Received: 8/20/2008

Lab ID: 0808316-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: SLB
Fluoride	0.40	0.10		mg/L	1	8/20/2008 3:47:58 PM
Chloride	76	1.0		mg/L	10	8/20/2008 1:11:17 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2008 3:47:58 PM
Bromide	ND	1.0		mg/L	10	8/20/2008 1:11:17 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 3:47:58 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 3:47:58 PM
Sulfate	3.2	0.50		mg/L	1	8/20/2008 3:47:58 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-01

Client Sample ID: RW #23  
Collection Date: 8/19/2008 10:00:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	48	10		mg/L	10	8/26/2008 3:51:47 PM
Motor Oil Range Organics (MRO)	ND	50		mg/L	10	8/26/2008 3:51:47 PM
Surr: DNOP	0	58-140	S	%REC	10	8/26/2008 3:51:47 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	70	5.0		mg/L	100	8/29/2008 3:25:25 AM
Surr: BFB	91.1	79.2-121		%REC	100	8/29/2008 3:25:25 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.40	0.10		mg/L	1	8/20/2008 3:47:58 PM
Chloride	76	1.0		mg/L	10	8/20/2008 1:11:17 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2008 3:47:58 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 3:47:58 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 3:47:58 PM
Sulfate	3.2	0.50		mg/L	1	8/20/2008 3:47:58 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	9/2/2008 2:18:41 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/5/2008 4:17:29 PM
Barium	1.4	0.20		mg/L	10	9/5/2008 6:01:34 PM
Cadmium	ND	0.0020		mg/L	1	9/5/2008 4:17:29 PM
Calcium	110	10		mg/L	10	9/5/2008 6:01:34 PM
Chromium	ND	0.0060		mg/L	1	9/5/2008 4:17:29 PM
Copper	ND	0.0060		mg/L	1	9/5/2008 4:17:29 PM
Iron	2.9	0.20		mg/L	10	9/5/2008 6:01:34 PM
Lead	0.013	0.0050		mg/L	1	9/5/2008 4:17:29 PM
Magnesium	47	1.0		mg/L	1	9/5/2008 4:17:29 PM
Manganese	4.6	0.020		mg/L	10	9/5/2008 6:01:34 PM
Potassium	6.3	1.0		mg/L	1	9/5/2008 4:17:29 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:37:31 PM
Silver	ND	0.0050		mg/L	1	9/5/2008 4:17:29 PM
Sodium	170	10		mg/L	10	9/5/2008 6:01:34 PM
Zinc	ND	0.050		mg/L	1	9/5/2008 4:17:29 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/3/2008 2:34:21 PM
Barium	1.5	0.10		mg/L	5	9/3/2008 3:47:22 PM
Cadmium	ND	0.0020		mg/L	1	9/3/2008 2:34:21 PM
Chromium	ND	0.0060		mg/L	1	9/3/2008 2:34:21 PM
Lead	0.027	0.0050		mg/L	1	9/3/2008 2:34:21 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-01

Client Sample ID: RW #23  
Collection Date: 8/19/2008 10:00:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Selenium	ND	0.050		mg/L	1	9/3/2008 2:34:21 PM
Silver	ND	0.0050		mg/L	1	9/3/2008 2:34:21 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	50		µg/L	1	8/25/2008
Acenaphthylene	ND	50		µg/L	1	8/25/2008
Aniline	ND	50		µg/L	1	8/25/2008
Anthracene	ND	50		µg/L	1	8/25/2008
Azobenzene	ND	50		µg/L	1	8/25/2008
Benz(a)anthracene	ND	50		µg/L	1	8/25/2008
Benzo(a)pyrene	ND	50		µg/L	1	8/25/2008
Benzo(b)fluoranthene	ND	50		µg/L	1	8/25/2008
Benzo(g,h,i)perylene	ND	50		µg/L	1	8/25/2008
Benzo(k)fluoranthene	ND	50		µg/L	1	8/25/2008
Benzoic acid	ND	100		µg/L	1	8/25/2008
Benzyl alcohol	ND	50		µg/L	1	8/25/2008
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	8/25/2008
Bis(2-chloroethyl)ether	ND	50		µg/L	1	8/25/2008
Bis(2-chloroisopropyl)ether	ND	50		µg/L	1	8/25/2008
Bis(2-ethylhexyl)phthalate	ND	50		µg/L	1	8/25/2008
4-Bromophenyl phenyl ether	ND	50		µg/L	1	8/25/2008
Butyl benzyl phthalate	ND	50		µg/L	1	8/25/2008
Carbazole	ND	50		µg/L	1	8/25/2008
4-Chloro-3-methylphenol	ND	50		µg/L	1	8/25/2008
4-Chloroaniline	ND	50		µg/L	1	8/25/2008
2-Chloronaphthalene	ND	50		µg/L	1	8/25/2008
2-Chlorophenol	ND	50		µg/L	1	8/25/2008
4-Chlorophenyl phenyl ether	ND	50		µg/L	1	8/25/2008
Chrysene	ND	50		µg/L	1	8/25/2008
Di-n-butyl phthalate	ND	50		µg/L	1	8/25/2008
Di-n-octyl phthalate	ND	50		µg/L	1	8/25/2008
Dibenz(a,h)anthracene	ND	50		µg/L	1	8/25/2008
Dibenzofuran	ND	50		µg/L	1	8/25/2008
1,2-Dichlorobenzene	ND	50		µg/L	1	8/25/2008
1,3-Dichlorobenzene	ND	50		µg/L	1	8/25/2008
1,4-Dichlorobenzene	ND	50		µg/L	1	8/25/2008
3,3'-Dichlorobenzidine	ND	50		µg/L	1	8/25/2008
Diethyl phthalate	ND	50		µg/L	1	8/25/2008
Dimethyl phthalate	ND	50		µg/L	1	8/25/2008
2,4-Dichlorophenol	ND	100		µg/L	1	8/25/2008
2,4-Dimethylphenol	ND	50		µg/L	1	8/25/2008
4,6-Dinitro-2-methylphenol	ND	100		µg/L	1	8/25/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-01

**Client Sample ID:** RW #23  
**Collection Date:** 8/19/2008 10:00:00 AM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
2,4-Dinitrophenol	ND	100		µg/L	1	8/25/2008
2,4-Dinitrotoluene	ND	50		µg/L	1	8/25/2008
2,6-Dinitrotoluene	ND	50		µg/L	1	8/25/2008
Fluoranthene	ND	50		µg/L	1	8/25/2008
Fluorene	83	50		µg/L	1	8/25/2008
Hexachlorobenzene	ND	50		µg/L	1	8/25/2008
Hexachlorobutadiene	ND	50		µg/L	1	8/25/2008
Hexachlorocyclopentadiene	ND	50		µg/L	1	8/25/2008
Hexachloroethane	ND	50		µg/L	1	8/25/2008
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	8/25/2008
Isophorone	ND	50		µg/L	1	8/25/2008
2-Methylnaphthalene	2600	250		µg/L	5	8/25/2008
2-Methylphenol	ND	50		µg/L	1	8/25/2008
3+4-Methylphenol	ND	50		µg/L	1	8/25/2008
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	8/25/2008
N-Nitrosodimethylamine	ND	50		µg/L	1	8/25/2008
N-Nitrosodiphenylamine	ND	50		µg/L	1	8/25/2008
Naphthalene	1500	250		µg/L	5	8/25/2008
2-Nitroaniline	ND	50		µg/L	1	8/25/2008
3-Nitroaniline	ND	50		µg/L	1	8/25/2008
4-Nitroaniline	ND	50		µg/L	1	8/25/2008
Nitrobenzene	ND	50		µg/L	1	8/25/2008
2-Nitrophenol	ND	50		µg/L	1	8/25/2008
4-Nitrophenol	ND	50		µg/L	1	8/25/2008
Pentachlorophenol	ND	200		µg/L	1	8/25/2008
Phenanthrene	150	50		µg/L	1	8/25/2008
Phenol	ND	50		µg/L	1	8/25/2008
Pyrene	ND	50		µg/L	1	8/25/2008
Pyridine	ND	50		µg/L	1	8/25/2008
1,2,4-Trichlorobenzene	ND	50		µg/L	1	8/25/2008
2,4,5-Trichlorophenol	ND	50		µg/L	1	8/25/2008
2,4,6-Trichlorophenol	ND	50		µg/L	1	8/25/2008
Surr: 2,4,6-Tribromophenol	99.0	16.6-150		%REC	1	8/25/2008
Surr: 2-Fluorobiphenyl	86.0	19.6-134		%REC	1	8/25/2008
Surr: 2-Fluorophenol	69.2	9.54-113		%REC	1	8/25/2008
Surr: 4-Terphenyl-d14	68.2	22.7-145		%REC	1	8/25/2008
Surr: Nitrobenzene-d5	99.4	14.6-134		%REC	1	8/25/2008
Surr: Phenol-d5	60.3	10.7-80.3		%REC	1	8/25/2008
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	9800	200		µg/L	200	8/27/2008 5:32:32 PM
Toluene	ND	100		µg/L	100	8/22/2008 3:01:22 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-01

Client Sample ID: RW #23  
Collection Date: 8/19/2008 10:00:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Ethylbenzene	1600	100		µg/L	100	8/22/2008 3:01:22 PM
Methyl tert-butyl ether (MTBE)	1500	100		µg/L	100	8/22/2008 3:01:22 PM
1,2,4-Trimethylbenzene	3600	100		µg/L	100	8/22/2008 3:01:22 PM
1,3,5-Trimethylbenzene	790	100		µg/L	100	8/22/2008 3:01:22 PM
1,2-Dichloroethane (EDC)	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,2-Dibromoethane (EDB)	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Naphthalene	870	200		µg/L	100	8/22/2008 3:01:22 PM
1-Methylnaphthalene	ND	400		µg/L	100	8/22/2008 3:01:22 PM
2-Methylnaphthalene	500	400		µg/L	100	8/22/2008 3:01:22 PM
Acetone	ND	1000		µg/L	100	8/22/2008 3:01:22 PM
Bromobenzene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Bromodichloromethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Bromoform	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Bromomethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
2-Butanone	ND	1000		µg/L	100	8/22/2008 3:01:22 PM
Carbon disulfide	ND	1000		µg/L	100	8/22/2008 3:01:22 PM
Carbon Tetrachloride	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Chlorobenzene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Chloroethane	ND	200		µg/L	100	8/22/2008 3:01:22 PM
Chloroform	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Chloromethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
2-Chlorotoluene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
4-Chlorotoluene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
cis-1,2-DCE	ND	100		µg/L	100	8/22/2008 3:01:22 PM
cis-1,3-Dichloropropene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,2-Dibromo-3-chloropropane	ND	200		µg/L	100	8/22/2008 3:01:22 PM
Dibromochloromethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Dibromomethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,2-Dichlorobenzene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,3-Dichlorobenzene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,4-Dichlorobenzene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Dichlorodifluoromethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,1-Dichloroethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,1-Dichloroethene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,2-Dichloropropane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,3-Dichloropropane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
2,2-Dichloropropane	ND	200		µg/L	100	8/22/2008 3:01:22 PM
1,1-Dichloropropene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Hexachlorobutadiene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
2-Hexanone	ND	1000		µg/L	100	8/22/2008 3:01:22 PM
Isopropylbenzene	110	100		µg/L	100	8/22/2008 3:01:22 PM
4-Isopropyltoluene	ND	100		µg/L	100	8/22/2008 3:01:22 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-01

**Client Sample ID:** RW #23  
**Collection Date:** 8/19/2008 10:00:00 AM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
4-Methyl-2-pentanone	ND	1000		µg/L	100	8/22/2008 3:01:22 PM
Methylene Chloride	ND	300		µg/L	100	8/22/2008 3:01:22 PM
n-Butylbenzene	130	100		µg/L	100	8/22/2008 3:01:22 PM
n-Propylbenzene	210	100		µg/L	100	8/22/2008 3:01:22 PM
sec-Butylbenzene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Styrene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
tert-Butylbenzene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,1,1,2-Tetrachloroethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,1,2,2-Tetrachloroethane	ND	200		µg/L	100	8/22/2008 3:01:22 PM
Tetrachloroethene (PCE)	ND	100		µg/L	100	8/22/2008 3:01:22 PM
trans-1,2-DCE	ND	100		µg/L	100	8/22/2008 3:01:22 PM
trans-1,3-Dichloropropene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,2,3-Trichlorobenzene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,2,4-Trichlorobenzene	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,1,1-Trichloroethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,1,2-Trichloroethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Trichloroethene (TCE)	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Trichlorofluoromethane	ND	100		µg/L	100	8/22/2008 3:01:22 PM
1,2,3-Trichloropropane	ND	200		µg/L	100	8/22/2008 3:01:22 PM
Vinyl chloride	ND	100		µg/L	100	8/22/2008 3:01:22 PM
Xylenes, Total	9700	150		µg/L	100	8/22/2008 3:01:22 PM
Surr: 1,2-Dichloroethane-d4	92.3	68.1-123		%REC	100	8/22/2008 3:01:22 PM
Surr: 4-Bromofluorobenzene	99.1	53.2-145		%REC	100	8/22/2008 3:01:22 PM
Surr: Dibromofluoromethane	99.0	68.5-119		%REC	100	8/22/2008 3:01:22 PM
Surr: Toluene-d8	100	64-131		%REC	100	8/22/2008 3:01:22 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	780	40		mg/L CaCO3	2	8/28/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/28/2008
Bicarbonate	780	40		mg/L CaCO3	2	8/28/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	850	1.0		mg CO2/L	1	8/29/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-02

**Client Sample ID:** MW #44  
**Collection Date:** 8/19/2008 10:25:00 AM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.62	0.10		mg/L	1	8/20/2008 1:28:41 PM
Chloride	72	1.0		mg/L	10	8/20/2008 6:24:39 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2008 1:28:41 PM
Bromide	0.28	0.10		mg/L	1	8/20/2008 1:28:41 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 1:28:41 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 1:28:41 PM
Sulfate	3000	25		mg/L	50	8/22/2008 10:05:47 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-02

**Client Sample ID:** MW #44  
**Collection Date:** 8/19/2008 10:25:00 AM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/22/2008 1:12:01 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/22/2008 1:12:01 AM
Surr: DNOP	139	58-140		%REC	1	8/22/2008 1:12:01 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/29/2008 3:55:48 AM
Surr: BFB	81.1	79.2-121		%REC	1	8/29/2008 3:55:48 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.62	0.10		mg/L	1	8/20/2008 1:28:41 PM
Chloride	72	1.0		mg/L	10	8/20/2008 6:24:39 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2008 1:28:41 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 1:28:41 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 1:28:41 PM
Sulfate	3000	25		mg/L	50	8/22/2008 10:05:47 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	9/2/2008 2:20:31 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/5/2008 4:20:18 PM
Barium	ND	0.020		mg/L	1	9/5/2008 4:20:18 PM
Cadmium	ND	0.0020		mg/L	1	9/5/2008 4:20:18 PM
Calcium	470	10		mg/L	10	9/5/2008 6:04:24 PM
Chromium	ND	0.0060		mg/L	1	9/5/2008 4:20:18 PM
Copper	ND	0.0060		mg/L	1	9/5/2008 4:20:18 PM
Iron	0.083	0.020		mg/L	1	9/5/2008 4:20:18 PM
Lead	ND	0.0050		mg/L	1	9/5/2008 4:20:18 PM
Magnesium	64	1.0		mg/L	1	9/5/2008 4:20:18 PM
Manganese	1.7	0.020		mg/L	10	9/5/2008 6:04:24 PM
Potassium	8.0	1.0		mg/L	1	9/5/2008 4:20:18 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:39:59 PM
Silver	ND	0.0050		mg/L	1	9/5/2008 4:20:18 PM
Sodium	900	10		mg/L	10	9/5/2008 6:04:24 PM
Zinc	ND	0.050		mg/L	1	9/5/2008 4:20:18 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/3/2008 3:15:13 PM
Barium	ND	0.020		mg/L	1	9/3/2008 3:15:13 PM
Cadmium	ND	0.0020		mg/L	1	9/3/2008 3:15:13 PM
Chromium	ND	0.0060		mg/L	1	9/3/2008 3:15:13 PM
Lead	0.0058	0.0050		mg/L	1	9/3/2008 3:15:13 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-02

**Client Sample ID:** MW #44  
**Collection Date:** 8/19/2008 10:25:00 AM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Selenium	ND	0.050		mg/L	1	9/3/2008 3:15:13 PM
Silver	ND	0.0050		mg/L	1	9/3/2008 3:15:13 PM

<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/25/2008
Acenaphthylene	ND	10		µg/L	1	8/25/2008
Aniline	ND	10		µg/L	1	8/25/2008
Anthracene	ND	10		µg/L	1	8/25/2008
Azobenzene	ND	10		µg/L	1	8/25/2008
Benz(a)anthracene	ND	10		µg/L	1	8/25/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/25/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/25/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/25/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/25/2008
Benzoic acid	ND	20		µg/L	1	8/25/2008
Benzyl alcohol	ND	10		µg/L	1	8/25/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/25/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/25/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/25/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/25/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/25/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/25/2008
Carbazole	ND	10		µg/L	1	8/25/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/25/2008
4-Chloroaniline	ND	10		µg/L	1	8/25/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/25/2008
2-Chlorophenol	ND	10		µg/L	1	8/25/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/25/2008
Chrysene	ND	10		µg/L	1	8/25/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/25/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/25/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/25/2008
Dibenzofuran	ND	10		µg/L	1	8/25/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/25/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/25/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/25/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/25/2008
Diethyl phthalate	ND	10		µg/L	1	8/25/2008
Dimethyl phthalate	ND	10		µg/L	1	8/25/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/25/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/25/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/25/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-02

Client Sample ID: MW #44  
Collection Date: 8/19/2008 10:25:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
2,4-Dinitrophenol	ND	20		µg/L	1	8/25/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/25/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/25/2008
Fluoranthene	ND	10		µg/L	1	8/25/2008
Fluorene	ND	10		µg/L	1	8/25/2008
Hexachlorobenzene	ND	10		µg/L	1	8/25/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/25/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/25/2008
Hexachloroethane	ND	10		µg/L	1	8/25/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/25/2008
Isophorone	ND	10		µg/L	1	8/25/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/25/2008
2-Methylphenol	ND	10		µg/L	1	8/25/2008
3+4-Methylphenol	ND	10		µg/L	1	8/25/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/25/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/25/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/25/2008
Naphthalene	ND	10		µg/L	1	8/25/2008
2-Nitroaniline	ND	10		µg/L	1	8/25/2008
3-Nitroaniline	ND	10		µg/L	1	8/25/2008
4-Nitroaniline	ND	10		µg/L	1	8/25/2008
Nitrobenzene	ND	10		µg/L	1	8/25/2008
2-Nitrophenol	ND	10		µg/L	1	8/25/2008
4-Nitrophenol	ND	10		µg/L	1	8/25/2008
Pentachlorophenol	ND	40		µg/L	1	8/25/2008
Phenanthrene	ND	10		µg/L	1	8/25/2008
Phenol	ND	10		µg/L	1	8/25/2008
Pyrene	ND	10		µg/L	1	8/25/2008
Pyridine	ND	10		µg/L	1	8/25/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/25/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/25/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/25/2008
Surr: 2,4,6-Tribromophenol	92.3	16.6-150		%REC	1	8/25/2008
Surr: 2-Fluorobiphenyl	84.7	19.6-134		%REC	1	8/25/2008
Surr: 2-Fluorophenol	65.2	9.54-113		%REC	1	8/25/2008
Surr: 4-Terphenyl-d14	61.5	22.7-145		%REC	1	8/25/2008
Surr: Nitrobenzene-d5	85.7	14.6-134		%REC	1	8/25/2008
Surr: Phenol-d5	57.9	10.7-80.3		%REC	1	8/25/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Toluene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-02

Client Sample ID: MW #44  
Collection Date: 8/19/2008 10:25:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Ethylbenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Methyl tert-butyl ether (MTBE)	1.8	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Naphthalene	ND	2.0		µg/L	1	8/22/2008 3:30:15 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 3:30:15 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 3:30:15 PM
Acetone	ND	10		µg/L	1	8/22/2008 3:30:15 PM
Bromobenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Bromoform	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Bromomethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
2-Butanone	ND	10		µg/L	1	8/22/2008 3:30:15 PM
Carbon disulfide	ND	10		µg/L	1	8/22/2008 3:30:15 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Chlorobenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Chloroethane	ND	2.0		µg/L	1	8/22/2008 3:30:15 PM
Chloroform	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Chloromethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2008 3:30:15 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Dibromomethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/22/2008 3:30:15 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
2-Hexanone	ND	10		µg/L	1	8/22/2008 3:30:15 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-02

**Client Sample ID:** MW #44  
**Collection Date:** 8/19/2008 10:25:00 AM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2008 3:30:15 PM
Methylene Chloride	ND	3.0		µg/L	1	8/22/2008 3:30:15 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Styrene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/22/2008 3:30:15 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2008 3:30:15 PM
Vinyl chloride	ND	1.0		µg/L	1	8/22/2008 3:30:15 PM
Xylenes, Total	ND	1.5		µg/L	1	8/22/2008 3:30:15 PM
Surr: 1,2-Dichloroethane-d4	93.5	68.1-123		%REC	1	8/22/2008 3:30:15 PM
Surr: 4-Bromofluorobenzene	96.0	53.2-145		%REC	1	8/22/2008 3:30:15 PM
Surr: Dibromofluoromethane	91.4	68.5-119		%REC	1	8/22/2008 3:30:15 PM
Surr: Toluene-d8	97.1	64-131		%REC	1	8/22/2008 3:30:15 PM

**SM 2320B: ALKALINITY**

Analyst: TAF

Alkalinity, Total (As CaCO <sub>3</sub> )	350	20		mg/L CaCO <sub>3</sub>	1	8/28/2008
Carbonate	ND	2.0		mg/L CaCO <sub>3</sub>	1	8/28/2008
Bicarbonate	350	20		mg/L CaCO <sub>3</sub>	1	8/28/2008

**TOTAL CARBON DIOXIDE CALCULATION**

Analyst: TAF

Total Carbon Dioxide	360	1.0		mg CO <sub>2</sub> /L	1	8/29/2008
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**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level.  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-03

**Client Sample ID:** RW #15  
**Collection Date:** 8/19/2008 11:05:00 AM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: SLB
Fluoride	0.29	0.10		mg/L	1	8/20/2008 2:20:54 PM
Chloride	420	2.0		mg/L	20	8/20/2008 6:42:04 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/20/2008 6:42:04 PM
Bromide	7.8	2.0		mg/L	20	8/20/2008 6:42:04 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 2:20:54 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 2:20:54 PM
Sulfate	0.76	0.50		mg/L	1	8/20/2008 2:20:54 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808316  
 Project: Refinery Wells Annual 2008  
 Lab ID: 0808316-03

Client Sample ID: RW #15  
 Collection Date: 8/19/2008 11:05:00 AM  
 Date Received: 8/20/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	2.3	1.0		mg/L	1	8/26/2008 2:09:33 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/26/2008 2:09:33 PM
Surr: DNOP	182	58-140	S	%REC	1	8/26/2008 2:09:33 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	62	2.5		mg/L	50	8/29/2008 4:26:07 AM
Surr: BFB	96.2	79.2-121		%REC	50	8/29/2008 4:26:07 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.29	0.10		mg/L	1	8/20/2008 2:20:54 PM
Chloride	420	2.0		mg/L	20	8/20/2008 6:42:04 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/20/2008 6:42:04 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 2:20:54 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 2:20:54 PM
Sulfate	0.76	0.50		mg/L	1	8/20/2008 2:20:54 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	9/2/2008 2:26:00 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/5/2008 4:24:24 PM
Barium	1.2	0.20		mg/L	10	9/5/2008 6:07:18 PM
Cadmium	ND	0.0020		mg/L	1	9/5/2008 4:24:24 PM
Calcium	130	10		mg/L	10	9/5/2008 6:07:18 PM
Chromium	ND	0.0060		mg/L	1	9/5/2008 4:24:24 PM
Copper	ND	0.0060		mg/L	1	9/5/2008 4:24:24 PM
Iron	5.3	0.20		mg/L	10	9/5/2008 6:07:18 PM
Lead	ND	0.0050		mg/L	1	9/5/2008 4:24:24 PM
Magnesium	44	1.0		mg/L	1	9/5/2008 4:24:24 PM
Manganese	2.8	0.020		mg/L	10	9/5/2008 6:07:18 PM
Potassium	3.7	1.0		mg/L	1	9/5/2008 4:24:24 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:42:28 PM
Silver	ND	0.0050		mg/L	1	9/5/2008 4:24:24 PM
Sodium	550	10		mg/L	10	9/5/2008 6:07:18 PM
Zinc	0.054	0.050		mg/L	1	9/5/2008 4:24:24 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/3/2008 2:37:06 PM
Barium	1.5	0.10		mg/L	5	9/3/2008 3:50:05 PM
Cadmium	ND	0.0020		mg/L	1	9/3/2008 2:37:06 PM
Chromium	ND	0.0060		mg/L	1	9/3/2008 2:37:06 PM
Lead	ND	0.0050		mg/L	1	9/3/2008 2:37:06 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-03

Client Sample ID: RW #15  
Collection Date: 8/19/2008 11:05:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Selenium	ND	0.050		mg/L	1	9/3/2008 2:37:06 PM
Silver	ND	0.0050		mg/L	1	9/3/2008 2:37:06 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/25/2008
Acenaphthylene	ND	10		µg/L	1	8/25/2008
Aniline	ND	10		µg/L	1	8/25/2008
Anthracene	ND	10		µg/L	1	8/25/2008
Azobenzene	ND	10		µg/L	1	8/25/2008
Benz(a)anthracene	ND	10		µg/L	1	8/25/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/25/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/25/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/25/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/25/2008
Benzoic acid	ND	20		µg/L	1	8/25/2008
Benzyl alcohol	ND	10		µg/L	1	8/25/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/25/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/25/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/25/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/25/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/25/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/25/2008
Carbazole	ND	10		µg/L	1	8/25/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/25/2008
4-Chloroaniline	ND	10		µg/L	1	8/25/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/25/2008
2-Chlorophenol	ND	10		µg/L	1	8/25/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/25/2008
Chrysene	ND	10		µg/L	1	8/25/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/25/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/25/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/25/2008
Dibenzofuran	ND	10		µg/L	1	8/25/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/25/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/25/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/25/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/25/2008
Diethyl phthalate	ND	10		µg/L	1	8/25/2008
Dimethyl phthalate	ND	10		µg/L	1	8/25/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/25/2008
2,4-Dimethylphenol	13	10		µg/L	1	8/25/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/25/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-03

**Client Sample ID:** RW #15  
**Collection Date:** 8/19/2008 11:05:00 AM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
2,4-Dinitrophenol	ND	20		µg/L	1	8/25/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/25/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/25/2008
Fluoranthene	ND	10		µg/L	1	8/25/2008
Fluorene	ND	10		µg/L	1	8/25/2008
Hexachlorobenzene	ND	10		µg/L	1	8/25/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/25/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/25/2008
Hexachloroethane	ND	10		µg/L	1	8/25/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/25/2008
Isophorone	ND	10		µg/L	1	8/25/2008
2-Methylnaphthalene	79	10		µg/L	1	8/25/2008
2-Methylphenol	ND	10		µg/L	1	8/25/2008
3+4-Methylphenol	ND	10		µg/L	1	8/25/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/25/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/25/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/25/2008
Naphthalene	280	50		µg/L	5	8/25/2008
2-Nitroaniline	ND	10		µg/L	1	8/25/2008
3-Nitroaniline	ND	10		µg/L	1	8/25/2008
4-Nitroaniline	ND	10		µg/L	1	8/25/2008
Nitrobenzene	ND	10		µg/L	1	8/25/2008
2-Nitrophenol	ND	10		µg/L	1	8/25/2008
4-Nitrophenol	ND	10		µg/L	1	8/25/2008
Pentachlorophenol	ND	40		µg/L	1	8/25/2008
Phenanthrene	ND	10		µg/L	1	8/25/2008
Phenol	18	10		µg/L	1	8/25/2008
Pyrene	ND	10		µg/L	1	8/25/2008
Pyridine	ND	10		µg/L	1	8/25/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/25/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/25/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/25/2008
Surr: 2,4,6-Tribromophenol	88.8	16.6-150		%REC	1	8/25/2008
Surr: 2-Fluorobiphenyl	76.1	19.6-134		%REC	1	8/25/2008
Surr: 2-Fluorophenol	61.4	9.54-113		%REC	1	8/25/2008
Surr: 4-Terphenyl-d14	55.1	22.7-145		%REC	1	8/25/2008
Surr: Nitrobenzene-d5	81.2	14.6-134		%REC	1	8/25/2008
Surr: Phenol-d5	52.2	10.7-80.3		%REC	1	8/25/2008

## EPA METHOD 8260B: VOLATILES

Analyst: HL

Benzene	6000	100	µg/L	100	8/26/2008 8:55:08 PM
Toluene	1000	100	µg/L	100	8/26/2008 8:55:08 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-03

Client Sample ID: RW #15  
Collection Date: 8/19/2008 11:05:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Ethylbenzene	4100	100		µg/L	100	8/26/2008 8:55:08 PM
Methyl tert-butyl ether (MTBE)	30	10		µg/L	10	8/22/2008 4:00:14 PM
1,2,4-Trimethylbenzene	2900	100		µg/L	100	8/26/2008 8:55:08 PM
1,3,5-Trimethylbenzene	680	10		µg/L	10	8/22/2008 4:00:14 PM
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Naphthalene	620	20		µg/L	10	8/22/2008 4:00:14 PM
1-Methylnaphthalene	92	40		µg/L	10	8/22/2008 4:00:14 PM
2-Methylnaphthalene	150	40		µg/L	10	8/22/2008 4:00:14 PM
Acetone	ND	100		µg/L	10	8/22/2008 4:00:14 PM
Bromobenzene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Bromodichloromethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Bromoform	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Bromomethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
2-Butanone	ND	100		µg/L	10	8/22/2008 4:00:14 PM
Carbon disulfide	ND	100		µg/L	10	8/22/2008 4:00:14 PM
Carbon Tetrachloride	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Chlorobenzene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Chloroethane	ND	20		µg/L	10	8/22/2008 4:00:14 PM
Chloroform	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Chloromethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
2-Chlorotoluene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
4-Chlorotoluene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
cis-1,2-DCE	ND	10		µg/L	10	8/22/2008 4:00:14 PM
cis-1,3-Dichloropropene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	8/22/2008 4:00:14 PM
Dibromochloromethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Dibromomethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,2-Dichlorobenzene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,3-Dichlorobenzene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,4-Dichlorobenzene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Dichlorodifluoromethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,1-Dichloroethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,1-Dichloroethene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,2-Dichloropropane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,3-Dichloropropane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
2,2-Dichloropropane	ND	20		µg/L	10	8/22/2008 4:00:14 PM
1,1-Dichloropropene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Hexachlorobutadiene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
2-Hexanone	ND	100		µg/L	10	8/22/2008 4:00:14 PM
Isopropylbenzene	150	10		µg/L	10	8/22/2008 4:00:14 PM
4-Isopropyltoluene	ND	10		µg/L	10	8/22/2008 4:00:14 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit



**Hall Environmental Analysis Laboratory, Inc.**

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-03

**Client Sample ID:** RW #15  
**Collection Date:** 8/19/2008 11:05:00 AM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
4-Methyl-2-pentanone	ND	100		µg/L	10	8/22/2008 4:00:14 PM
Methylene Chloride	ND	30		µg/L	10	8/22/2008 4:00:14 PM
n-Butylbenzene	73	10		µg/L	10	8/22/2008 4:00:14 PM
n-Propylbenzene	390	10		µg/L	10	8/22/2008 4:00:14 PM
sec-Butylbenzene	17	10		µg/L	10	8/22/2008 4:00:14 PM
Styrene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
tert-Butylbenzene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	8/22/2008 4:00:14 PM
Tetrachloroethene (PCE)	ND	10		µg/L	10	8/22/2008 4:00:14 PM
trans-1,2-DCE	ND	10		µg/L	10	8/22/2008 4:00:14 PM
trans-1,3-Dichloropropene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,2,3-Trichlorobenzene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,1,1-Trichloroethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,1,2-Trichloroethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Trichloroethene (TCE)	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Trichlorofluoromethane	ND	10		µg/L	10	8/22/2008 4:00:14 PM
1,2,3-Trichloropropane	ND	20		µg/L	10	8/22/2008 4:00:14 PM
Vinyl chloride	ND	10		µg/L	10	8/22/2008 4:00:14 PM
Xylenes, Total	21000	150		µg/L	100	8/26/2008 8:55:08 PM
Surr: 1,2-Dichloroethane-d4	91.1	68.1-123		%REC	10	8/22/2008 4:00:14 PM
Surr: 4-Bromofluorobenzene	97.6	53.2-145		%REC	10	8/22/2008 4:00:14 PM
Surr: Dibromofluoromethane	93.9	68.5-119		%REC	10	8/22/2008 4:00:14 PM
Surr: Toluene-d8	129	64-131		%REC	10	8/22/2008 4:00:14 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1200	40		mg/L CaCO3	2	8/28/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/28/2008
Bicarbonate	1200	40		mg/L CaCO3	2	8/28/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1200	1.0		mg CO2/L	1	8/29/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 11-Dec-08

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW #40**Lab Order:** 0808316**Collection Date:** 8/19/2008 11:20:00 AM**Project:** Refinery Wells Annual 2008**Date Received:** 8/20/2008**Lab ID:** 0808316-04**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.33	0.10		mg/L	1	8/20/2008 2:38:19 PM
Chloride	310	2.0		mg/L	20	8/20/2008 6:59:28 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/20/2008 6:59:28 PM
Bromide	4.4	0.10		mg/L	1	8/20/2008 2:38:19 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 2:38:19 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 2:38:19 PM
Sulfate	ND	0.50		mg/L	1	8/20/2008 2:38:19 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-04

Client Sample ID: MW #40  
Collection Date: 8/19/2008 11:20:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	41	1.0		mg/L	1	8/26/2008 2:43:37 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/26/2008 2:43:37 PM
Surr: DNOP	178	58-140	S	%REC	1	8/26/2008 2:43:37 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	5.1	0.25		mg/L	5	8/29/2008 4:59:08 AM
Surr: BFB	210	79.2-121	S	%REC	5	8/29/2008 4:59:08 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.33	0.10		mg/L	1	8/20/2008 2:38:19 PM
Chloride	310	2.0		mg/L	20	8/20/2008 6:59:28 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/20/2008 6:59:28 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/20/2008 2:38:19 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2008 2:38:19 PM
Sulfate	ND	0.50		mg/L	1	8/20/2008 2:38:19 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	9/2/2008 2:27:51 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/5/2008 4:28:12 PM
Barium	1.8	0.10		mg/L	5	9/5/2008 6:12:57 PM
Cadmium	ND	0.0020		mg/L	1	9/5/2008 4:28:12 PM
Calcium	91	1.0		mg/L	1	9/5/2008 4:28:12 PM
Chromium	ND	0.0060		mg/L	1	9/5/2008 4:28:12 PM
Copper	ND	0.0060		mg/L	1	9/5/2008 4:28:12 PM
Iron	5.5	0.20		mg/L	10	9/5/2008 6:10:09 PM
Lead	ND	0.0050		mg/L	1	9/5/2008 4:28:12 PM
Magnesium	42	1.0		mg/L	1	9/5/2008 4:28:12 PM
Manganese	2.5	0.020		mg/L	10	9/5/2008 6:10:09 PM
Potassium	3.5	1.0		mg/L	1	9/5/2008 4:28:12 PM
Selenium	ND	0.25		mg/L	5	9/8/2008 10:52:19 PM
Silver	ND	0.0050		mg/L	1	9/5/2008 4:28:12 PM
Sodium	520	10		mg/L	10	9/5/2008 6:10:09 PM
Zinc	0.063	0.050		mg/L	1	9/5/2008 4:28:12 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	9/3/2008 2:51:15 PM
Barium	2.6	0.10		mg/L	5	9/3/2008 3:52:49 PM
Cadmium	ND	0.0020		mg/L	1	9/3/2008 2:51:15 PM
Chromium	ND	0.0060		mg/L	1	9/3/2008 2:51:15 PM
Lead	0.0095	0.0050		mg/L	1	9/3/2008 2:51:15 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808316  
 Project: Refinery Wells Annual 2008  
 Lab ID: 0808316-04

Client Sample ID: MW #40  
 Collection Date: 8/19/2008 11:20:00 AM  
 Date Received: 8/20/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Selenium	ND	0.050		mg/L	1	9/3/2008 2:51:15 PM
Silver	ND	0.0050		mg/L	1	9/3/2008 2:51:15 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	50		µg/L	1	8/25/2008
Acenaphthylene	ND	50		µg/L	1	8/25/2008
Aniline	ND	50		µg/L	1	8/25/2008
Anthracene	ND	50		µg/L	1	8/25/2008
Azobenzene	ND	50		µg/L	1	8/25/2008
Benz(a)anthracene	ND	50		µg/L	1	8/25/2008
Benzo(a)pyrene	ND	50		µg/L	1	8/25/2008
Benzo(b)fluoranthene	ND	50		µg/L	1	8/25/2008
Benzo(g,h,i)perylene	ND	50		µg/L	1	8/25/2008
Benzo(k)fluoranthene	ND	50		µg/L	1	8/25/2008
Benzoic acid	ND	100		µg/L	1	8/25/2008
Benzyl alcohol	ND	50		µg/L	1	8/25/2008
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	8/25/2008
Bis(2-chloroethyl)ether	ND	50		µg/L	1	8/25/2008
Bis(2-chloroisopropyl)ether	ND	50		µg/L	1	8/25/2008
Bis(2-ethylhexyl)phthalate	ND	50		µg/L	1	8/25/2008
4-Bromophenyl phenyl ether	ND	50		µg/L	1	8/25/2008
Butyl benzyl phthalate	ND	50		µg/L	1	8/25/2008
Carbazole	ND	50		µg/L	1	8/25/2008
4-Chloro-3-methylphenol	ND	50		µg/L	1	8/25/2008
4-Chloroaniline	ND	50		µg/L	1	8/25/2008
2-Chloronaphthalene	ND	50		µg/L	1	8/25/2008
2-Chlorophenol	ND	50		µg/L	1	8/25/2008
4-Chlorophenyl phenyl ether	ND	50		µg/L	1	8/25/2008
Chrysene	ND	50		µg/L	1	8/25/2008
Di-n-butyl phthalate	ND	50		µg/L	1	8/25/2008
Di-n-octyl phthalate	ND	50		µg/L	1	8/25/2008
Dibenz(a,h)anthracene	ND	50		µg/L	1	8/25/2008
Dibenzofuran	ND	50		µg/L	1	8/25/2008
1,2-Dichlorobenzene	ND	50		µg/L	1	8/25/2008
1,3-Dichlorobenzene	ND	50		µg/L	1	8/25/2008
1,4-Dichlorobenzene	ND	50		µg/L	1	8/25/2008
3,3'-Dichlorobenzidine	ND	50		µg/L	1	8/25/2008
Diethyl phthalate	ND	50		µg/L	1	8/25/2008
Dimethyl phthalate	ND	50		µg/L	1	8/25/2008
2,4-Dichlorophenol	ND	100		µg/L	1	8/25/2008
2,4-Dimethylphenol	ND	50		µg/L	1	8/25/2008
4,6-Dinitro-2-methylphenol	ND	100		µg/L	1	8/25/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808316  
 Project: Refinery Wells Annual 2008  
 Lab ID: 0808316-04

Client Sample ID: MW #40  
 Collection Date: 8/19/2008 11:20:00 AM  
 Date Received: 8/20/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
2,4-Dinitrophenol	ND	100		µg/L	1	8/25/2008
2,4-Dinitrotoluene	ND	50		µg/L	1	8/25/2008
2,6-Dinitrotoluene	ND	50		µg/L	1	8/25/2008
Fluoranthene	ND	50		µg/L	1	8/25/2008
Fluorene	ND	50		µg/L	1	8/25/2008
Hexachlorobenzene	ND	50		µg/L	1	8/25/2008
Hexachlorobutadiene	ND	50		µg/L	1	8/25/2008
Hexachlorocyclopentadiene	ND	50		µg/L	1	8/25/2008
Hexachloroethane	ND	50		µg/L	1	8/25/2008
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	8/25/2008
Isophorone	ND	50		µg/L	1	8/25/2008
2-Methylnaphthalene	300	50		µg/L	1	8/25/2008
2-Methylphenol	ND	50		µg/L	1	8/25/2008
3+4-Methylphenol	ND	50		µg/L	1	8/25/2008
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	8/25/2008
N-Nitrosodimethylamine	ND	50		µg/L	1	8/25/2008
N-Nitrosodiphenylamine	ND	50		µg/L	1	8/25/2008
Naphthalene	140	50		µg/L	1	8/25/2008
2-Nitroaniline	ND	50		µg/L	1	8/25/2008
3-Nitroaniline	ND	50		µg/L	1	8/25/2008
4-Nitroaniline	ND	50		µg/L	1	8/25/2008
Nitrobenzene	ND	50		µg/L	1	8/25/2008
2-Nitrophenol	ND	50		µg/L	1	8/25/2008
4-Nitrophenol	ND	50		µg/L	1	8/25/2008
Pentachlorophenol	ND	200		µg/L	1	8/25/2008
Phenanthrene	56	50		µg/L	1	8/25/2008
Phenol	ND	50		µg/L	1	8/25/2008
Pyrene	ND	50		µg/L	1	8/25/2008
Pyridine	ND	50		µg/L	1	8/25/2008
1,2,4-Trichlorobenzene	ND	50		µg/L	1	8/25/2008
2,4,5-Trichlorophenol	ND	50		µg/L	1	8/25/2008
2,4,6-Trichlorophenol	ND	50		µg/L	1	8/25/2008
Surr: 2,4,6-Tribromophenol	87.2	16.6-150		%REC	1	8/25/2008
Surr: 2-Fluorobiphenyl	75.5	19.6-134		%REC	1	8/25/2008
Surr: 2-Fluorophenol	47.4	9.54-113		%REC	1	8/25/2008
Surr: 4-Terphenyl-d14	57.9	22.7-145		%REC	1	8/25/2008
Surr: Nitrobenzene-d5	79.1	14.6-134		%REC	1	8/25/2008
Surr: Phenol-d5	42.1	10.7-80.3		%REC	1	8/25/2008
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	34	1.0		µg/L	1	8/27/2008 6:01:10 PM
Toluene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-04

**Client Sample ID:** MW #40  
**Collection Date:** 8/19/2008 11:20:00 AM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Ethylbenzene	5.6	1.0		µg/L	1	8/27/2008 6:01:10 PM
Methyl tert-butyl ether (MTBE)	16	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,2,4-Trimethylbenzene	120	5.0		µg/L	5	8/28/2008 11:27:33 AM
1,3,5-Trimethylbenzene	19	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Naphthalene	150	10		µg/L	5	8/28/2008 11:27:33 AM
1-Methylnaphthalene	110	20		µg/L	5	8/28/2008 11:27:33 AM
2-Methylnaphthalene	150	20		µg/L	5	8/28/2008 11:27:33 AM
Acetone	ND	10		µg/L	1	8/27/2008 6:01:10 PM
Bromobenzene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Bromoform	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Bromomethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
2-Butanone	ND	10		µg/L	1	8/27/2008 6:01:10 PM
Carbon disulfide	ND	10		µg/L	1	8/27/2008 6:01:10 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Chlorobenzene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Chloroethane	ND	2.0		µg/L	1	8/27/2008 6:01:10 PM
Chloroform	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Chloromethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/27/2008 6:01:10 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Dibromomethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,2-Dichlorobenzene	1.4	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	8/27/2008 6:01:10 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
2-Hexanone	ND	10		µg/L	1	8/27/2008 6:01:10 PM
Isopropylbenzene	59	1.0		µg/L	1	8/27/2008 6:01:10 PM
4-Isopropyltoluene	3.9	1.0		µg/L	1	8/27/2008 6:01:10 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-04

Client Sample ID: MW #40  
Collection Date: 8/19/2008 11:20:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
4-Methyl-2-pentanone	ND	10		µg/L	1	8/27/2008 6:01:10 PM
Methylene Chloride	ND	3.0		µg/L	1	8/27/2008 6:01:10 PM
n-Butylbenzene	6.2	1.0		µg/L	1	8/27/2008 6:01:10 PM
n-Propylbenzene	66	1.0		µg/L	1	8/27/2008 6:01:10 PM
sec-Butylbenzene	11	1.0		µg/L	1	8/27/2008 6:01:10 PM
Styrene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
tert-Butylbenzene	1.9	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/27/2008 6:01:10 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/27/2008 6:01:10 PM
Vinyl chloride	ND	1.0		µg/L	1	8/27/2008 6:01:10 PM
Xylenes, Total	1.8	1.5		µg/L	1	8/27/2008 6:01:10 PM
Surr: 1,2-Dichloroethane-d4	97.7	68.1-123		%REC	1	8/27/2008 6:01:10 PM
Surr: 4-Bromofluorobenzene	177	53.2-145	S	%REC	1	8/27/2008 6:01:10 PM
Surr: Dibromofluoromethane	96.8	68.5-119		%REC	1	8/27/2008 6:01:10 PM
Surr: Toluene-d8	117	64-131		%REC	1	8/27/2008 6:01:10 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	1200	40		mg/L CaCO3	2	8/28/2008
Carbonate	ND	4.0		mg/L CaCO3	2	8/28/2008
Bicarbonate	1200	40		mg/L CaCO3	2	8/28/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	1200	1.0		mg CO2/L	1	8/29/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-05

Client Sample ID: Field Blank  
Collection Date: 8/19/2008 10:40:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/29/2008 5:59:46 AM
Surr: BFB	87.1	79.2-121		%REC	1	8/29/2008 5:59:46 AM
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Toluene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Ethylbenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Naphthalene	ND	2.0		µg/L	1	8/22/2008 4:58:59 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 4:58:59 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 4:58:59 PM
Acetone	ND	10		µg/L	1	8/22/2008 4:58:59 PM
Bromobenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Bromodichloromethane	1.4	1.0		µg/L	1	8/22/2008 4:58:59 PM
Bromoform	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Bromomethane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
2-Butanone	ND	10		µg/L	1	8/22/2008 4:58:59 PM
Carbon disulfide	ND	10		µg/L	1	8/22/2008 4:58:59 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Chlorobenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Chloroethane	ND	2.0		µg/L	1	8/22/2008 4:58:59 PM
Chloroform	13	1.0		µg/L	1	8/22/2008 4:58:59 PM
Chloromethane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2008 4:58:59 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Dibromomethane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-05

Client Sample ID: Field Blank  
Collection Date: 8/19/2008 10:40:00 AM  
Date Received: 8/20/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
2,2-Dichloropropane	ND	2.0		µg/L	1	8/22/2008 4:58:59 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
2-Hexanone	ND	10		µg/L	1	8/22/2008 4:58:59 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2008 4:58:59 PM
Methylene Chloride	ND	3.0		µg/L	1	8/22/2008 4:58:59 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Styrene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/22/2008 4:58:59 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2008 4:58:59 PM
Vinyl chloride	ND	1.0		µg/L	1	8/22/2008 4:58:59 PM
Xylenes, Total	ND	1.5		µg/L	1	8/22/2008 4:58:59 PM
Surr: 1,2-Dichloroethane-d4	92.0	68.1-123		%REC	1	8/22/2008 4:58:59 PM
Surr: 4-Bromofluorobenzene	97.3	53.2-145		%REC	1	8/22/2008 4:58:59 PM
Surr: Dibromofluoromethane	95.2	68.5-119		%REC	1	8/22/2008 4:58:59 PM
Surr: Toluene-d8	97.5	64-131		%REC	1	8/22/2008 4:58:59 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Lab Order: 0808316  
Project: Refinery Wells Annual 2008  
Lab ID: 0808316-06

Client Sample ID: Trip Blank  
Collection Date:  
Date Received: 8/20/2008  
Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/29/2008 6:30:03 AM
Surr: BFB	85.9	79.2-121		%REC	1	8/29/2008 6:30:03 AM

<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Toluene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Ethylbenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Naphthalene	ND	2.0		µg/L	1	8/22/2008 5:27:45 PM
1-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 5:27:45 PM
2-Methylnaphthalene	ND	4.0		µg/L	1	8/22/2008 5:27:45 PM
Acetone	ND	10		µg/L	1	8/22/2008 5:27:45 PM
Bromobenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Bromodichloromethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Bromoform	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Bromomethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
2-Butanone	ND	10		µg/L	1	8/22/2008 5:27:45 PM
Carbon disulfide	ND	10		µg/L	1	8/22/2008 5:27:45 PM
Carbon Tetrachloride	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Chlorobenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Chloroethane	ND	2.0		µg/L	1	8/22/2008 5:27:45 PM
Chloroform	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Chloromethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
2-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
4-Chlorotoluene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
cis-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/22/2008 5:27:45 PM
Dibromochloromethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Dibromomethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,1-Dichloroethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,2-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,3-Dichloropropane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 29-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808316  
**Project:** Refinery Wells Annual 2008  
**Lab ID:** 0808316-06

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Date Received:** 8/20/2008  
**Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260B: VOLATILES</b>						Analyst: HL
2,2-Dichloropropane	ND	2.0		µg/L	1	8/22/2008 5:27:45 PM
1,1-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Hexachlorobutadiene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
2-Hexanone	ND	10		µg/L	1	8/22/2008 5:27:45 PM
Isopropylbenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
4-Isopropyltoluene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	8/22/2008 5:27:45 PM
Methylene Chloride	ND	3.0		µg/L	1	8/22/2008 5:27:45 PM
n-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
n-Propylbenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
sec-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Styrene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
tert-Butylbenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/22/2008 5:27:45 PM
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
trans-1,2-DCE	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Trichlorofluoromethane	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/22/2008 5:27:45 PM
Vinyl chloride	ND	1.0		µg/L	1	8/22/2008 5:27:45 PM
Xylenes, Total	ND	1.5		µg/L	1	8/22/2008 5:27:45 PM
Surr: 1,2-Dichloroethane-d4	91.9	68.1-123		%REC	1	8/22/2008 5:27:45 PM
Surr: 4-Bromofluorobenzene	99.2	53.2-145		%REC	1	8/22/2008 5:27:45 PM
Surr: Dibromofluoromethane	97.5	68.5-119		%REC	1	8/22/2008 5:27:45 PM
Surr: Toluene-d8	97.4	64-131		%REC	1	8/22/2008 5:27:45 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**CASE NARRATIVE**

September 3, 2008

Lab Name: Anatek Labs, Inc. 1282 Alturas Drive, Moscow, ID 83843 [www.anateklabs.com](http://www.anateklabs.com) FL NELAP  
E87893, NV ID13-2004-31, WA DOE C126, OR ELAP ID200001, MT 0028, ID, CO, NM

Project Tracking No.: 0808316

Anatek Batch: 080813036

**Project Summary:** Four (4) water samples were received on 8/21/2008 for metals (EPA 6020A) analysis. All samples were received in good condition and with the appropriate chain of custody. Samples were received at 6.2C.

<u>Client Sample ID</u>	<u>Anatek Sample ID</u>	<u>Method/Prep Method</u>
0808316-01F / RW #23	080821018-001	EPA 6020A/3005A
0808316-02F / RW #44	080821018-001	EPA 6020A/3005A
0808316-03F / RW #15	080821018-001	EPA 6020A/3005A
0808316-04F / RW #40	080821018-001	EPA 6020A/3005A

**QA/QC Checks**

<u>Parameters</u>	<u>Yes / No</u>	<u>Exceptions / Deviations</u>
Sample Holding Time Valid?	Y	NA
Surrogate Recoveries Valid?	Y	NA
QC Sample(s) Recoveries Valid?	Y	NA
Method Blank(s) Valid?	Y	NA
Tune(s) Valid?	Y	NA
Internal Standard Responses Valid?	Y	NA
Initial Calibration Curve(s) Valid?	Y	NA
Continuing Calibration(s) Valid?	Y	NA
Comments:	Y	NA

**1. Holding Time Requirements**

No problems encountered.

**2. GC/MS Tune Requirements**

NA

**3. Calibration Requirements**

No problems encountered.

**4. Surrogate Recovery Requirements**

NA

**5. QC Sample (LCS/MS/MSD) Recovery Requirements**

No problems encountered.

**6. Method Blank Requirements**

The method blanks were non-detect (&lt;MDL) for all analytes. No problems encountered.

**7. Internal Standard(s) Response Requirements**

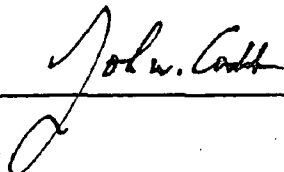
No problems encountered.

**8. Comments**

No problems encountered.

**I certify that this data package is in compliance with the terms and conditions of the contract. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee.**

**Approved by:**

  
\_\_\_\_\_

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

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

**Batch #:** 080821018  
**Project Name:** 0808316

## Analytical Results Report

<b>Sample Number</b>	080821018-001	<b>Sampling Date</b>	8/19/2008	<b>Date/Time Received</b>	8/21/2008 10:45 AM
<b>Client Sample ID</b>	0808316-01F / RW #23	<b>Sampling Time</b>	10:00 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water	<b>Sample Location</b>			

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Wednesday, September 03, 2008

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**Attn:** ANDY FREEMAN

**Batch #:** 080821018  
**Project Name:** 0808316

## Analytical Results Report

<b>Sample Number</b>	080821018-002	<b>Sampling Date</b>	8/19/2008	<b>Date/Time Received</b>	8/21/2008 10:45 AM
<b>Client Sample ID</b>	0808316-02F / MW #44	<b>Sampling Time</b>	10:25 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water	<b>Sample Location</b>			

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.00103	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
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Wednesday, September 03, 2008

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**Address:** 4901 HAWKINS NE SUITE D  
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**Attn:** ANDY FREEMAN

**Batch #:** 080821018  
**Project Name:** 0808316

## Analytical Results Report

<b>Sample Number</b>	080821018-003	<b>Sampling Date</b>	8/19/2008	<b>Date/Time Received</b>	8/21/2008 10:45 AM
<b>Client Sample ID</b>	0808316-03F / RW #15	<b>Sampling Time</b>	11:05 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water	<b>Sample Location</b>			

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

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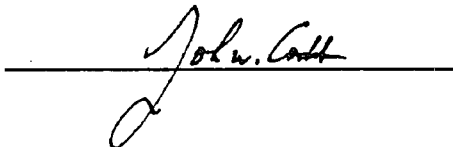
**Batch #:** 080821018  
**Project Name:** 0808316

## Analytical Results Report

<b>Sample Number</b>	080821018-004	<b>Sampling Date</b>	8/19/2008	<b>Date/Time Received</b>	8/21/2008 10:45 AM
<b>Client Sample ID</b>	0808316-04F / MW #40	<b>Sampling Time</b>	11:20 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water	<b>Sample Location</b>			

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

Authorized Signature



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

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
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**Attn:** ANDY FREEMAN

**Batch #:** 080821018  
**Project Name:** 0808316

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dissolved Uranium	0.0499	mg/L	0.05	99.8	85-115	8/27/2008	8/27/2008

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
080822025-002	Dissolved Uranium	0.00131	0.0515	mg/L	0.05	100.4	70-130	8/27/2008	8/27/2008

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dissolved Uranium	0.0502	mg/L	0.05	97.8	2.6	0-20	8/27/2008	8/27/2008

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	8/27/2008

AR Acceptable Range  
ND Not Detected  
PQL Practical Quantitation Limit  
RPD Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Wednesday, September 03, 2008

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# Hall Environmental Analysis Laboratory, Inc.

29-Sep-08

Lab Order: 0808316  
Client: Western Refining Southwest, Inc.  
Project: Refinery Wells Annual 2008

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808316-01A	RW #23	8/19/2008 10:00:00 AM	Aqueous	EPA Method 8015B: Diesel Range	16847	8/21/2008	8/26/2008
				EPA Method 8015B: Gasoline Range	R29989		8/29/2008
				EPA Method 8260B: VOLATILES	R29944		8/26/2008
				EPA Method 8260B: VOLATILES	R29968		8/27/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008
0808316-01B				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/25/2008
				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/25/2008
0808316-01C				Carbon Dioxide	R29985		8/29/2008
				EPA Method 300.0: Anions	R29875		8/20/2008
				EPA Method 300.0: Anions	R29875		8/20/2008
				SM 2320B: Alkalinity	R29984		8/28/2008
0808316-01D				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA Method 7470: Mercury	16942	9/2/2008	9/2/2008
0808316-01E				EPA Method 6010B: Dissolved Metals	R30098		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30098		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
0808316-02A	MW #44	8/19/2008 10:25:00 AM		EPA Method 8015B: Diesel Range	16847	8/21/2008	8/22/2008
				EPA Method 8015B: Gasoline Range	R29989		8/29/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008
0808316-02B				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/25/2008
0808316-02C				Carbon Dioxide	R29985		8/29/2008
				EPA Method 300.0: Anions	R29875		8/20/2008
				EPA Method 300.0: Anions	R29875		8/20/2008
				EPA Method 300.0: Anions	R29899		8/22/2008

Lab Order: 0808316  
 Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808316-02C	MW #44	8/19/2008 10:25:00 AM	Aqueous	SM 2320B: Alkalinity	R29984		8/28/2008
0808316-02D				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA Method 7470: Mercury	16942	9/2/2008	9/2/2008
0808316-02E				EPA Method 6010B: Dissolved Metals	R30098		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
				EPA Method 6010B: Dissolved Metals	R30098		9/5/2008
0808316-03A	RW #15	8/19/2008 11:05:00 AM		EPA Method 8015B: Diesel Range	16847	8/21/2008	8/26/2008
				EPA Method 8015B: Gasoline Range	R29989		8/29/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008
				EPA Method 8260B: VOLATILES	R29944		8/26/2008
0808316-03B				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/25/2008
				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/25/2008
0808316-03C				Carbon Dioxide	R29985		8/29/2008
				EPA Method 300.0: Anions	R29875		8/20/2008
				EPA Method 300.0: Anions	R29875		8/20/2008
				SM 2320B: Alkalinity	R29984		8/28/2008
0808316-03D				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA Method 7470: Mercury	16942	9/2/2008	9/2/2008
0808316-03E				EPA Method 6010B: Dissolved Metals	R30098		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30098		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
0808316-04A	MW #40	8/19/2008 11:20:00 AM		EPA Method 8015B: Diesel Range	16847	8/21/2008	8/26/2008
				EPA Method 8015B: Gasoline Range	R29989		8/29/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008

# Hall Environmental Analysis Laboratory, Inc.

29-Sep-08

## DATES REPORT

Lab Order: 0808316

Client: Western Refining Southwest, Inc.

Project: Refinery Wells Annual 2008

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808316-04A	MW #40	8/19/2008 11:20:00 AM	Aqueous	EPA Method 8260B: VOLATILES	R29944		8/26/2008
				EPA Method 8260B: VOLATILES	R29944		8/26/2008
				EPA Method 8260B: VOLATILES	R29968		8/27/2008
				EPA Method 8260B: VOLATILES	R29976		8/28/2008
0808316-04B				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/25/2008
				EPA Method 8270C: Semivolatiles	16839	8/21/2008	8/25/2008
0808316-04C				Carbon Dioxide	R29985		8/29/2008
				EPA Method 300.0: Anions	R29875		8/20/2008
				EPA Method 300.0: Anions	R29875		8/20/2008
				SM 2320B: Alkalinity	R29984		8/28/2008
0808316-04D				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA 6010B: Total Recoverable Metals	16920	8/28/2008	9/3/2008
				EPA Method 7470: Mercury	16942	9/2/2008	9/2/2008
0808316-04E				EPA Method 6010B: Dissolved Metals	R30131		9/9/2008
				EPA Method 6010B: Dissolved Metals	R30124		9/8/2008
				EPA Method 6010B: Dissolved Metals	R30098		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30098		9/5/2008
				EPA Method 6010B: Dissolved Metals	R30098		9/5/2008
0808316-05A	Field Blank	8/19/2008 10:40:00 AM		EPA Method 8015B: Gasoline Range	R29989		8/29/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008
0808316-06A	Trip Blank		Trip Blank	EPA Method 8015B: Gasoline Range	R29989		8/29/2008
				EPA Method 8260B: VOLATILES	R29898		8/22/2008

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 300.0: Anions

Sample ID: MB MBLK Batch ID: R29875 Analysis Date: 8/20/2008 10:52:01 AM

Fluoride	ND	mg/L	0.10
Chloride	ND	mg/L	0.10
Nitrogen, Nitrite (As N)	ND	mg/L	0.10
Nitrogen, Nitrate (As N)	ND	mg/L	0.10
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50
Sulfate	ND	mg/L	0.50

Sample ID: MB MBLK Batch ID: R29899 Analysis Date: 8/22/2008 9:13:34 AM

Fluoride	ND	mg/L	0.10
Chloride	ND	mg/L	0.10
Nitrogen, Nitrite (As N)	ND	mg/L	0.10
Nitrogen, Nitrate (As N)	ND	mg/L	0.10
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50
Sulfate	ND	mg/L	0.50

Sample ID: LCS LCS Batch ID: R29875 Analysis Date: 8/20/2008 11:09:25 AM

Fluoride	0.5055	mg/L	0.10	101	90	110
Chloride	4.788	mg/L	0.10	95.8	90	110
Nitrogen, Nitrite (As N)	0.9544	mg/L	0.10	95.4	90	110
Nitrogen, Nitrate (As N)	2.440	mg/L	0.10	97.6	90	110
Phosphorus, Orthophosphate (As P)	4.800	mg/L	0.50	96.0	90	110
Sulfate	9.725	mg/L	0.50	97.2	90	110

Sample ID: LCS LCS Batch ID: R29899 Analysis Date: 8/22/2008 9:30:59 AM

Fluoride	0.5033	mg/L	0.10	101	90	110
Chloride	4.867	mg/L	0.10	97.3	90	110
Nitrogen, Nitrite (As N)	0.9855	mg/L	0.10	98.5	90	110
Nitrogen, Nitrate (As N)	2.482	mg/L	0.10	99.3	90	110
Phosphorus, Orthophosphate (As P)	4.847	mg/L	0.50	96.9	90	110
Sulfate	9.922	mg/L	0.50	99.2	90	110

## Method: SM 2320B: Alkalinity

Sample ID: 0808316-02CMSD MSD Batch ID: R29984 Analysis Date: 8/28/2008

Alkalinity, Total (As CaCO3)	424.0	mg/L CaC	20	88.8	80	120	0.236	20
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Sample ID: MB MBLK Batch ID: R29984 Analysis Date: 8/28/2008

Alkalinity, Total (As CaCO3)	ND	mg/L CaC	20
Carbonate	ND	mg/L CaC	2.0
Bicarbonate	ND	mg/L CaC	20

Sample ID: LCS LCS Batch ID: R29984 Analysis Date: 8/28/2008

Alkalinity, Total (As CaCO3)	83.00	mg/L CaC	20	103	80	120
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Sample ID: 0808316-02CMS MS Batch ID: R29984 Analysis Date: 8/28/2008

Alkalinity, Total (As CaCO3)	424.0	mg/L CaC	20	88.8	80	120
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## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8015B: Diesel Range

Sample ID: MB-16847 MBLK Batch ID: 16847 Analysis Date: 8/21/2008 6:58:00 PM

Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Surr: DNOP	1.331	mg/L	0	133	58	140			

Sample ID: LCS-16847 LCS Batch ID: 16847 Analysis Date: 8/21/2008 7:32:04 PM

Diesel Range Organics (DRO)	5.664	mg/L	1.0	113	74	157			
Surr: DNOP	0.6554	mg/L	0	131	58	140			

Sample ID: LCSD-16847 LCSD Batch ID: 16847 Analysis Date: 8/21/2008 8:06:10 PM

Diesel Range Organics (DRO)	5.516	mg/L	1.0	110	74	157	2.64	23	
Surr: DNOP	0.6443	mg/L	0	129	58	140	0	0	

## Method: EPA Method 8015B: Gasoline Range

Sample ID: 5ML RB MBLK Batch ID: R29989 Analysis Date: 8/28/2008 9:10:51 AM

Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	17.41	mg/L	0	87.0	79.2	121			

Sample ID: LCS-GRO LCS Batch ID: R29989 Analysis Date: 8/28/2008 5:48:03 PM

Gasoline Range Organics (GRO)	0.4892	mg/L	0.050	97.8	80	115			
Surr: BFB	18.96	mg/L	0	94.8	79.2	121			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29898 Analysis Date: 8/22/2008 9:00:38 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29898 Analysis Date: 8/22/2008 9:00:38 AM

4-Methyl-2-pentanone	ND	µg/L	10						
Methylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	1.0						
Styrene	ND	µg/L	1.0						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0						
Tetrachloroethene (PCE)	3.025	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.408	µg/L	0	94.1	68.1	123			
Surr: 4-Bromofluorobenzene	10.28	µg/L	0	103	53.2	145			
Surr: Dibromofluoromethane	9.325	µg/L	0	93.2	68.5	119			
Surr: Toluene-d8	9.914	µg/L	0	99.1	64	131			

Sample ID: b3

MBLK

Batch ID: R29898 Analysis Date: 8/22/2008 9:46:24 PM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	1.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b3

MBLK

Batch ID: R29898 Analysis Date: 8/22/2008 9:46:24 PM

Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260B: VOLATILES

Sample ID: b3

MBLK

Batch ID: R29898 Analysis Date: 8/22/2008 9:46:24 PM

1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.147	µg/L	0	91.5	68.1	123			
Surr: 4-Bromofluorobenzene	10.18	µg/L	0	102	53.2	145			
Surr: Dibromofluoromethane	9.580	µg/L	0	95.8	68.5	119			
Surr: Toluene-d8	9.652	µg/L	0	96.5	64	131			

Sample ID: 5ml rb

MBLK

Batch ID: R29944 Analysis Date: 8/26/2008 9:10:18 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	1.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
Carbon Tetrachloride	ND	µg/L	1.0						
Chlorobenzene	ND	µg/L	1.0						
Chloroethane	ND	µg/L	2.0						
Chloroform	ND	µg/L	1.0						
Chloromethane	ND	µg/L	1.0						
2-Chlorotoluene	ND	µg/L	1.0						
4-Chlorotoluene	ND	µg/L	1.0						
cis-1,2-DCE	ND	µg/L	1.0						
cis-1,3-Dichloropropene	ND	µg/L	1.0						
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0						
Dibromochloromethane	ND	µg/L	1.0						
Dibromomethane	ND	µg/L	1.0						
1,2-Dichlorobenzene	ND	µg/L	1.0						
1,3-Dichlorobenzene	ND	µg/L	1.0						
1,4-Dichlorobenzene	ND	µg/L	1.0						
Dichlorodifluoromethane	ND	µg/L	1.0						
1,1-Dichloroethane	ND	µg/L	1.0						
1,1-Dichloroethene	ND	µg/L	1.0						

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29944 Analysis Date: 8/26/2008 9:10:18 AM

1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	1.5
Surr: 1,2-Dichloroethane-d4	9.465	µg/L	0
Surr: 4-Bromofluorobenzene	9.922	µg/L	0
Surr: Dibromofluoromethane	9.526	µg/L	0
Surr: Toluene-d8	9.905	µg/L	0

Sample ID: b8

MBLK

Batch ID: R29944 Analysis Date: 8/26/2008 11:56:52 PM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
Methylnaphthalene	ND	µg/L	4.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b8

MBLK

Batch ID: R29944 Analysis Date: 8/26/2008 11:56:52 PM

2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260B: VOLATILES

Sample ID: b8

MBLK

Batch ID: R29944 Analysis Date: 8/26/2008 11:56:52 PM

trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.590	µg/L	0	95.9	68.1	123			
Surr: 4-Bromofluorobenzene	10.14	µg/L	0	101	53.2	145			
Surr: Dibromofluoromethane	9.294	µg/L	0	92.9	68.5	119			
Surr: Toluene-d8	10.23	µg/L	0	102	64	131			

Sample ID: 5ml rb

MBLK

Batch ID: R29968 Analysis Date: 8/27/2008 1:41:36 PM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	1.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
Carbon Tetrachloride	ND	µg/L	1.0						
Chlorobenzene	ND	µg/L	1.0						
Chloroethane	ND	µg/L	2.0						
Chloroform	ND	µg/L	1.0						
Chloromethane	ND	µg/L	1.0						
2-Chlorotoluene	ND	µg/L	1.0						
4-Chlorotoluene	ND	µg/L	1.0						
cis-1,2-DCE	ND	µg/L	1.0						
cis-1,3-Dichloropropene	ND	µg/L	1.0						
trans-1,2-Dibromo-3-chloropropane	ND	µg/L	2.0						

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29968 Analysis Date: 8/27/2008 1:41:36 PM

Dibromochloromethane	ND	µg/L	1.0						
Dibromomethane	ND	µg/L	1.0						
1,2-Dichlorobenzene	ND	µg/L	1.0						
1,3-Dichlorobenzene	ND	µg/L	1.0						
1,4-Dichlorobenzene	ND	µg/L	1.0						
Dichlorodifluoromethane	ND	µg/L	1.0						
1,1-Dichloroethane	ND	µg/L	1.0						
1,1-Dichloroethene	ND	µg/L	1.0						
1,2-Dichloropropane	ND	µg/L	1.0						
1,3-Dichloropropane	ND	µg/L	1.0						
2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	µg/L	1.0						
Hexachlorobutadiene	ND	µg/L	1.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	µg/L	1.0						
4-Isopropyltoluene	ND	µg/L	1.0						
4-Methyl-2-pentanone	ND	µg/L	10						
Methylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	1.0						
Styrene	ND	µg/L	1.0						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.457	µg/L	0	94.6	68.1	123			
Surr: 4-Bromofluorobenzene	10.14	µg/L	0	101	53.2	145			
Surr: Dibromofluoromethane	9.850	µg/L	0	98.5	68.5	119			
Surr: Toluene-d8	9.552	µg/L	0	95.5	64	131			

Sample ID: b4

MBLK

Batch ID: R29968 Analysis Date: 8/28/2008 1:47:54 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b4

MBLK

Batch ID: R29968 Analysis Date: 8/28/2008 1:47:54 AM

Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2,2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b4

MBLK

Batch ID: R29968 Analysis Date: 8/28/2008 1:47:54 AM

n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	1.0						
Styrene	ND	µg/L	1.0						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.136	µg/L	0	91.4	68.1	123			
Surr: 4-Bromofluorobenzene	9.650	µg/L	0	96.5	53.2	145			
Surr: Dibromofluoromethane	9.192	µg/L	0	91.9	68.5	119			
Surr: Toluene-d8	9.669	µg/L	0	96.7	64	131			

Sample ID: 5ml rb

MBLK

Batch ID: R29976 Analysis Date: 8/28/2008 9:29:05 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	1.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
Carbon Tetrachloride	ND	µg/L	1.0						
Chlorobenzene	ND	µg/L	1.0						

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29976 Analysis Date: 8/28/2008 9:29:05 AM

Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0
2-Dichloropropane	ND	µg/L	2.0
1,1-Dichloropropene	ND	µg/L	1.0
Hexachlorobutadiene	ND	µg/L	1.0
2-Hexanone	ND	µg/L	10
Isopropylbenzene	ND	µg/L	1.0
4-Isopropyltoluene	ND	µg/L	1.0
4-Methyl-2-pentanone	ND	µg/L	10
Methylene Chloride	ND	µg/L	3.0
n-Butylbenzene	ND	µg/L	1.0
n-Propylbenzene	ND	µg/L	1.0
sec-Butylbenzene	ND	µg/L	1.0
Styrene	ND	µg/L	1.0
tert-Butylbenzene	ND	µg/L	1.0
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0
Tetrachloroethene (PCE)	ND	µg/L	1.0
trans-1,2-DCE	ND	µg/L	1.0
trans-1,3-Dichloropropene	ND	µg/L	1.0
1,2,3-Trichlorobenzene	ND	µg/L	1.0
1,2,4-Trichlorobenzene	ND	µg/L	1.0
1,1,1-Trichloroethane	ND	µg/L	1.0
1,1,2-Trichloroethane	ND	µg/L	1.0
Trichloroethene (TCE)	ND	µg/L	1.0
Trichlorofluoromethane	ND	µg/L	1.0
1,2,3-Trichloropropane	ND	µg/L	2.0
Vinyl chloride	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260B: VOLATILES

Sample ID: 5ml rb

MBLK

Batch ID: R29976 Analysis Date: 8/28/2008 9:29:05 AM

Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.204	µg/L	0	92.0	68.1	123			
Surr: 4-Bromofluorobenzene	10.19	µg/L	0	102	53.2	145			
Surr: Dibromofluoromethane	9.641	µg/L	0	96.4	68.5	119			
Surr: Toluene-d8	9.724	µg/L	0	97.2	64	131			

Sample ID: b3

MBLK

Batch ID: R29976 Analysis Date: 8/28/2008 5:23:41 PM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
1,2,4-Trimethylbenzene	ND	µg/L	1.0
1,3,5-Trimethylbenzene	ND	µg/L	1.0
1,2-Dichloroethane (EDC)	ND	µg/L	1.0
1,2-Dibromoethane (EDB)	ND	µg/L	1.0
Naphthalene	ND	µg/L	2.0
1-Methylnaphthalene	ND	µg/L	4.0
2-Methylnaphthalene	ND	µg/L	4.0
Acetone	ND	µg/L	10
Bromobenzene	ND	µg/L	1.0
Bromodichloromethane	ND	µg/L	1.0
Bromoform	ND	µg/L	1.0
Bromomethane	ND	µg/L	1.0
2-Butanone	ND	µg/L	10
Carbon disulfide	ND	µg/L	10
Carbon Tetrachloride	ND	µg/L	1.0
Chlorobenzene	ND	µg/L	1.0
Chloroethane	ND	µg/L	2.0
Chloroform	ND	µg/L	1.0
Chloromethane	ND	µg/L	1.0
2-Chlorotoluene	ND	µg/L	1.0
4-Chlorotoluene	ND	µg/L	1.0
cis-1,2-DCE	ND	µg/L	1.0
cis-1,3-Dichloropropene	ND	µg/L	1.0
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0
Dibromochloromethane	ND	µg/L	1.0
Dibromomethane	ND	µg/L	1.0
1,2-Dichlorobenzene	ND	µg/L	1.0
1,3-Dichlorobenzene	ND	µg/L	1.0
1,4-Dichlorobenzene	ND	µg/L	1.0
Dichlorodifluoromethane	ND	µg/L	1.0
1,1-Dichloroethane	ND	µg/L	1.0
1,1-Dichloroethene	ND	µg/L	1.0
1,2-Dichloropropane	ND	µg/L	1.0
1,3-Dichloropropane	ND	µg/L	1.0

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260B: VOLATILES

Sample ID: b3

MBLK

Batch ID: R29976 Analysis Date: 8/28/2008 5:23:41 PM

2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	µg/L	1.0						
Hexachlorobutadiene	ND	µg/L	1.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	µg/L	1.0						
4-Isopropyltoluene	ND	µg/L	1.0						
4-Methyl-2-pentanone	ND	µg/L	10						
Methylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	1.0						
Styrene	ND	µg/L	1.0						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	2.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	1.5						
Surr: 1,2-Dichloroethane-d4	9.311	µg/L	0	93.1	68.1	123			
Surr: 4-Bromofluorobenzene	9.973	µg/L	0	99.7	53.2	145			
Surr: Dibromofluoromethane	10.02	µg/L	0	100	68.5	119			
Surr: Toluene-d8	9.734	µg/L	0	97.3	64	131			

Sample ID: 100ng lcs

LCS

Batch ID: R29898 Analysis Date: 8/22/2008 10:07:58 AM

Benzene	21.36	µg/L	1.0	107	86.8	120			
Toluene	20.15	µg/L	1.0	101	64.1	127			
Chlorobenzene	22.26	µg/L	1.0	111	82.4	113			
1,1-Dichloroethene	24.50	µg/L	1.0	122	86.5	132			
Trichloroethene (TCE)	20.02	µg/L	1.0	100	77.3	123			
Surr: 1,2-Dichloroethane-d4	9.332	µg/L	0	93.3	68.1	123			
Surr: 4-Bromofluorobenzene	10.14	µg/L	0	101	53.2	145			
Surr: Dibromofluoromethane	9.572	µg/L	0	95.7	68.5	119			
Surr: Toluene-d8	9.539	µg/L	0	95.4	64	131			

Sample ID: 100ng lcs

LCS

Batch ID: R29898 Analysis Date: 8/22/2008 10:43:56 PM

Benzene	21.89	µg/L	1.0	109	86.8	120			
Toluene	20.01	µg/L	1.0	100	64.1	127			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260B: VOLATILES

Sample ID: 100ng lcs		LCS			Batch ID: R29898		Analysis Date: 8/22/2008 10:43:56 PM	
Chlorobenzene	21.91	µg/L	1.0	110	82.4	113		
1,1-Dichloroethene	25.21	µg/L	1.0	126	86.5	132		
Trichloroethene (TCE)	20.05	µg/L	1.0	100	77.3	123		
Surr: 1,2-Dichloroethane-d4	9.240	µg/L	0	92.4	68.1	123		
Surr: 4-Bromofluorobenzene	10.03	µg/L	0	100	53.2	145		
Surr: Dibromofluoromethane	10.21	µg/L	0	102	68.5	119		
Surr: Toluene-d8	9.395	µg/L	0	94.0	64	131		

Sample ID: 100ng lcs		LCS			Batch ID: R29944		Analysis Date: 8/26/2008 10:22:08 AM	
Benzene	19.59	µg/L	1.0	97.9	86.8	120		
Toluene	20.66	µg/L	1.0	103	64.1	127		
Chlorobenzene	22.08	µg/L	1.0	110	82.4	113		
1,1-Dichloroethene	24.66	µg/L	1.0	123	86.5	132		
Trichloroethene (TCE)	19.33	µg/L	1.0	96.7	77.3	123		
Surr: 1,2-Dichloroethane-d4	9.429	µg/L	0	94.3	68.1	123		
Surr: 4-Bromofluorobenzene	9.765	µg/L	0	97.6	53.2	145		
Surr: Dibromofluoromethane	8.807	µg/L	0	88.1	68.5	119		
Surr: Toluene-d8	10.04	µg/L	0	100	64	131		

Sample ID: 100ng lcs		LCS			Batch ID: R29944		Analysis Date: 8/27/2008 1:08:33 AM	
Benzene	20.49	µg/L	1.0	102	86.8	120		
Toluene	20.66	µg/L	1.0	103	64.1	127		
Chlorobenzene	23.33	µg/L	1.0	117	82.4	113		S
1,1-Dichloroethene	25.11	µg/L	1.0	126	86.5	132		
Trichloroethene (TCE)	21.06	µg/L	1.0	105	77.3	123		
Surr: 1,2-Dichloroethane-d4	9.499	µg/L	0	95.0	68.1	123		
Surr: 4-Bromofluorobenzene	10.15	µg/L	0	101	53.2	145		
Surr: Dibromofluoromethane	9.799	µg/L	0	98.0	68.5	119		
Surr: Toluene-d8	9.590	µg/L	0	95.9	64	131		

Sample ID: 100ng lcs		LCS			Batch ID: R29968		Analysis Date: 8/27/2008 2:38:58 PM	
Benzene	21.89	µg/L	1.0	109	86.8	120		
Toluene	20.00	µg/L	1.0	100	64.1	127		
Chlorobenzene	22.59	µg/L	1.0	113	82.4	113		
1,1-Dichloroethene	24.83	µg/L	1.0	124	86.5	132		
Trichloroethene (TCE)	21.09	µg/L	1.0	105	77.3	123		
Surr: 1,2-Dichloroethane-d4	9.313	µg/L	0	93.1	68.1	123		
Surr: 4-Bromofluorobenzene	10.33	µg/L	0	103	53.2	145		
Surr: Dibromofluoromethane	10.25	µg/L	0	102	68.5	119		
Surr: Toluene-d8	9.503	µg/L	0	95.0	64	131		

Sample ID: 100ng lcs		LCS			Batch ID: R29968		Analysis Date: 8/28/2008 2:45:23 AM	
Benzene	21.80	µg/L	1.0	109	86.8	120		
Toluene	20.36	µg/L	1.0	102	64.1	127		
Chlorobenzene	22.04	µg/L	1.0	110	82.4	113		
1,1-Dichloroethene	24.09	µg/L	1.0	120	86.5	132		
Trichloroethene (TCE)	19.55	µg/L	1.0	97.8	77.3	123		

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260B: VOLATILES

Sample ID: 100ng lcs LCS Batch ID: R29968 Analysis Date: 8/28/2008 2:45:23 AM

Surr: 1,2-Dichloroethane-d4	9.349	µg/L	0	93.5	68.1	123
Surr: 4-Bromofluorobenzene	9.847	µg/L	0	98.5	53.2	145
Surr: Dibromofluoromethane	9.739	µg/L	0	97.4	68.5	119
Surr: Toluene-d8	9.497	µg/L	0	95.0	64	131

Sample ID: 100ng lcs LCS Batch ID: R29976 Analysis Date: 8/28/2008 10:26:23 AM

Benzene	20.29	µg/L	1.0	101	86.8	120	
Toluene	20.43	µg/L	1.0	102	64.1	127	
Chlorobenzene	22.79	µg/L	1.0	114	82.4	113	S
1,1-Dichloroethene	22.69	µg/L	1.0	113	86.5	132	
Trichloroethene (TCE)	20.03	µg/L	1.0	100	77.3	123	
Surr: 1,2-Dichloroethane-d4	9.327	µg/L	0	93.3	68.1	123	
Surr: 4-Bromofluorobenzene	9.506	µg/L	0	95.1	53.2	145	
Surr: Dibromofluoromethane	9.661	µg/L	0	96.6	68.5	119	
Surr: Toluene-d8	9.745	µg/L	0	97.5	64	131	

Sample ID: 100ng lcs LCS Batch ID: R29976 Analysis Date: 8/28/2008 6:20:53 PM

Benzene	21.54	µg/L	1.0	108	86.8	120	
Toluene	20.76	µg/L	1.0	104	64.1	127	
Chlorobenzene	23.38	µg/L	1.0	117	82.4	113	S
1,1-Dichloroethene	25.68	µg/L	1.0	128	86.5	132	
Trichloroethene (TCE)	19.97	µg/L	1.0	99.8	77.3	123	
Surr: 1,2-Dichloroethane-d4	9.245	µg/L	0	92.4	68.1	123	
Surr: 4-Bromofluorobenzene	10.07	µg/L	0	101	53.2	145	
Surr: Dibromofluoromethane	10.15	µg/L	0	101	68.5	119	
Surr: Toluene-d8	9.952	µg/L	0	99.5	64	131	

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16839

MBLK

Batch ID: 16839 Analysis Date: 8/24/2008

Acenaphthene	ND	µg/L	10
Acenaphthylene	ND	µg/L	10
Aniline	ND	µg/L	10
Anthracene	ND	µg/L	10
Azobenzene	ND	µg/L	10
Benz(a)anthracene	ND	µg/L	10
Benzo(a)pyrene	ND	µg/L	10
Benzo(b)fluoranthene	ND	µg/L	10
Benzo(g,h,i)perylene	ND	µg/L	10
Benzo(k)fluoranthene	ND	µg/L	10
Benzoic acid	ND	µg/L	20
Benzyl alcohol	ND	µg/L	10
Bis(2-chloroethoxy)methane	ND	µg/L	10
Bis(2-chloroethyl)ether	ND	µg/L	10
Bis(2-chloroisopropyl)ether	ND	µg/L	10
Bis(2-ethylhexyl)phthalate	ND	µg/L	10
4-Bromophenyl phenyl ether	ND	µg/L	10
Butyl benzyl phthalate	ND	µg/L	10
Carbazole	ND	µg/L	10
4-Chloro-3-methylphenol	ND	µg/L	10
4-Chloroaniline	ND	µg/L	10
2-Chloronaphthalene	ND	µg/L	10
2-Chlorophenol	ND	µg/L	10
4-Chlorophenyl phenyl ether	ND	µg/L	10
Chrysene	ND	µg/L	10
Di-n-butyl phthalate	ND	µg/L	10
Di-n-octyl phthalate	ND	µg/L	10
Dibenz(a,h)anthracene	ND	µg/L	10
Dibenzofuran	ND	µg/L	10
1,2-Dichlorobenzene	ND	µg/L	10
1,3-Dichlorobenzene	ND	µg/L	10
1,4-Dichlorobenzene	ND	µg/L	10
3,3'-Dichlorobenzidine	ND	µg/L	10
Diethyl phthalate	ND	µg/L	10
Dimethyl phthalate	ND	µg/L	10
2,4-Dichlorophenol	ND	µg/L	20
2,4-Dimethylphenol	ND	µg/L	10
4,6-Dinitro-2-methylphenol	ND	µg/L	20
2,4-Dinitrophenol	ND	µg/L	20
2,4-Dinitrotoluene	ND	µg/L	10
2,6-Dinitrotoluene	ND	µg/L	10
Fluoranthene	ND	µg/L	10
Fluorene	ND	µg/L	10
Hexachlorobenzene	ND	µg/L	10

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16839

MBLK

Batch ID: 16839

Analysis Date:

8/24/2008

Hexachlorobutadiene	ND	µg/L	10						
Hexachlorocyclopentadiene	ND	µg/L	10						
Hexachloroethane	ND	µg/L	10						
Indeno(1,2,3-cd)pyrene	ND	µg/L	10						
Isophorone	ND	µg/L	10						
2-Methylnaphthalene	ND	µg/L	10						
2-Methylphenol	ND	µg/L	10						
3+4-Methylphenol	ND	µg/L	10						
N-Nitrosodi-n-propylamine	ND	µg/L	10						
N-Nitrosodimethylamine	ND	µg/L	10						
N-Nitrosodiphenylamine	ND	µg/L	10						
Naphthalene	ND	µg/L	10						
2-Nitroaniline	ND	µg/L	10						
3-Nitroaniline	ND	µg/L	10						
4-Nitroaniline	ND	µg/L	10						
Nitrobenzene	ND	µg/L	10						
2-Nitrophenol	ND	µg/L	10						
4-Nitrophenol	ND	µg/L	10						
Pentachlorophenol	ND	µg/L	40						
Phenanthrene	ND	µg/L	10						
Phenol	ND	µg/L	10						
Pyrene	ND	µg/L	10						
Pyridine	ND	µg/L	10						
1,2,4-Trichlorobenzene	ND	µg/L	10						
2,4,5-Trichlorophenol	ND	µg/L	10						
2,4,6-Trichlorophenol	ND	µg/L	10						
Surr: 2,4,6-Tribromophenol	163.4	µg/L	0	81.7	16.6	150			
Surr: 2-Fluorobiphenyl	94.46	µg/L	0	94.5	19.6	134			
Surr: 2-Fluorophenol	137.3	µg/L	0	68.7	9.54	113			
Surr: 4-Terphenyl-d14	70.80	µg/L	0	70.8	22.7	145			
Surr: Nitrobenzene-d5	91.26	µg/L	0	91.3	14.6	134			
Surr: Phenol-d5	116.0	µg/L	0	58.0	10.7	80.3			

Sample ID: lcs-16839

LCS

Batch ID: 16839

Analysis Date:

8/24/2008

Acenaphthene	58.44	µg/L	10	58.4	11	123			
4-Chloro-3-methylphenol	114.2	µg/L	10	56.2	15.4	119			
2-Chlorophenol	101.3	µg/L	10	49.7	12.2	122			
1,4-Dichlorobenzene	46.86	µg/L	10	46.9	16.9	100			
2,4-Dinitrotoluene	58.54	µg/L	10	58.5	13	138			
N-Nitrosodi-n-propylamine	61.86	µg/L	10	61.9	9.93	122			
4-Nitrophenol	72.66	µg/L	10	36.3	12.5	87.4			
Pentachlorophenol	126.3	µg/L	40	63.2	3.55	114			
Phenol	57.74	µg/L	10	28.9	7.53	73.1			
Pyrene	64.38	µg/L	10	64.4	12.6	140			
1,2,4-Trichlorobenzene	50.96	µg/L	10	51.0	17.4	98.7			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: lcs-16839		LCS			Batch ID: 16839		Analysis Date: 8/24/2008	
Surr: 2,4,6-Tribromophenol	127.0	µg/L	0	63.5	16.6	150		
Surr: 2-Fluorobiphenyl	61.74	µg/L	0	61.7	19.6	134		
Surr: 2-Fluorophenol	74.52	µg/L	0	37.3	9.54	113		
Surr: 4-Terphenyl-d14	54.04	µg/L	0	54.0	22.7	145		
Surr: Nitrobenzene-d5	58.02	µg/L	0	58.0	14.6	134		
Surr: Phenol-d5	58.46	µg/L	0	29.2	10.7	80.3		

Sample ID: lcsd-16839	LCSD			Batch ID: 16839		Analysis Date:		8/24/2008
Acenaphthene	64.70	µg/L	10	64.7	11	123	10.2	30.5
4-Chloro-3-methylphenol	142.0	µg/L	10	70.1	15.4	119	21.7	28.6
2-Chlorophenol	129.7	µg/L	10	63.9	12.2	122	24.6	107
1,4-Dichlorobenzene	55.12	µg/L	10	55.1	16.9	100	16.2	62.1
2,4-Dinitrotoluene	63.90	µg/L	10	63.9	13	138	8.76	14.7
N-Nitrosodi-n-propylamine	71.76	µg/L	10	71.8	9.93	122	14.8	30.3
4-Nitrophenol	83.46	µg/L	10	41.7	12.5	87.4	13.8	36.3
Pentachlorophenol	143.3	µg/L	40	71.7	3.55	114	12.6	49
Phenol	78.56	µg/L	10	39.3	7.53	73.1	30.6	52.4
Pyrene	74.56	µg/L	10	74.6	12.6	140	14.7	16.3
1,2,4-Trichlorobenzene	57.44	µg/L	10	57.4	17.4	98.7	12.0	36.4
Surr: 2,4,6-Tribromophenol	143.2	µg/L	0	71.6	16.6	150	0	0
Surr: 2-Fluorobiphenyl	71.06	µg/L	0	71.1	19.6	134	0	0
Surr: 2-Fluorophenol	103.4	µg/L	0	51.7	9.54	113	0	0
Surr: 4-Terphenyl-d14	66.58	µg/L	0	66.6	22.7	145	0	0
Surr: Nitrobenzene-d5	69.64	µg/L	0	69.6	14.6	134	0	0
Surr: Phenol-d5	79.14	µg/L	0	39.6	10.7	80.3	0	0

Method: EPA Method 7470: Mercury

Sample ID: 0808316-02DMSD	MSD				Batch ID: 16942	Analysis Date: 9/2/2008 2:24:09 PM	
Mercury	0.004949	mg/L	0.00020	99.0	75	125	0.565 20
Sample ID: MB-16942	MBLK				Batch ID: 16942	Analysis Date: 9/2/2008 1:57:14 PM	
Mercury	ND	mg/L	0.00020				
Sample ID: LCS-16942	LCS				Batch ID: 16942	Analysis Date: 9/2/2008 1:58:59 PM	
Mercury	0.004755	mg/L	0.00020	95.1	80	120	
Sample ID: 0808316-02DMS	MS				Batch ID: 16942	Analysis Date: 9/2/2008 2:22:20 PM	
Mercury	0.004921	mg/L	0.00020	98.4	75	125	

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 6010B: Dissolved Metals

Sample ID: 0808316-04EMSD MSD Batch ID: R30098 Analysis Date: 9/5/2008 4:37:34 PM

Arsenic	0.5475	mg/L	0.020	110	75	125	5.42	20
Cadmium	0.5008	mg/L	0.0020	100	75	125	1.65	20
Chromium	0.5017	mg/L	0.0060	100	75	125	2.02	20
Copper	0.5287	mg/L	0.0060	106	75	125	1.76	20
Lead	0.4849	mg/L	0.0050	96.2	75	125	1.72	20
Magnesium	90.89	mg/L	1.0	97.7	75	125	0.553	20
Potassium	58.47	mg/L	1.0	99.9	75	125	0.602	20
Silver	0.5036	mg/L	0.0050	101	75	125	3.03	20
Zinc	0.5652	mg/L	0.050	101	75	125	2.21	20

Sample ID: 0808316-04EMSD MSD Batch ID: R30098 Analysis Date: 9/5/2008 6:28:24 PM

Barium	4.130	mg/L	0.10	94.7	75	125	12.7	20
Calcium	335.8	mg/L	5.0	96.5	75	125	3.02	20

Sample ID: 0808316-04EMSD MSD Batch ID: R30131 Analysis Date: 9/9/2008 2:28:11 PM

Selenium	2.743	mg/L	0.25	110	75	125	1.39	20
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Sample ID: MB MBLK Batch ID: R30098 Analysis Date: 9/5/2008 4:06:46 PM

Arsenic	ND	mg/L	0.020					
Barium	ND	mg/L	0.020					
Cadmium	ND	mg/L	0.0020					
Calcium	ND	mg/L	1.0					
Chromium	ND	mg/L	0.0060					
Copper	ND	mg/L	0.0060					
Iron	ND	mg/L	0.020					
Lead	ND	mg/L	0.0050					
Magnesium	ND	mg/L	1.0					
Manganese	ND	mg/L	0.0020					
Potassium	ND	mg/L	1.0					
Selenium	ND	mg/L	0.050					
Silver	ND	mg/L	0.0050					
Sodium	ND	mg/L	1.0					
Zinc	ND	mg/L	0.050					

Sample ID: MB MBLK Batch ID: R30124 Analysis Date: 9/8/2008 9:44:53 PM

Selenium	ND	mg/L	0.050					
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Sample ID: MB MBLK Batch ID: R30131 Analysis Date: 9/9/2008 1:59:49 PM

Selenium	ND	mg/L	0.050					
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Sample ID: LCS Batch ID: R30098 Analysis Date: 9/5/2008 4:14:33 PM

Arsenic	0.4911	mg/L	0.020	98.2	80	120		
Barium	0.4755	mg/L	0.020	95.1	80	120		
Cadmium	0.4901	mg/L	0.0020	98.0	80	120		
Calcium	49.13	mg/L	1.0	97.3	80	120		
Chromium	0.4843	mg/L	0.0060	96.9	80	120		
Copper	0.4789	mg/L	0.0060	95.8	80	120		
Iron	0.4718	mg/L	0.020	94.4	80	120		
Lead	0.4768	mg/L	0.0050	95.4	80	120		

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 6010B: Dissolved Metals</b>									
<b>Sample ID: LCS</b>		<b>LCS</b>							
					<b>Batch ID: R30098</b>		<b>Analysis Date:</b>		<b>9/5/2008 4:14:33 PM</b>
Magnesium	49.69	mg/L	1.0	98.4	80	120			
Manganese	0.4725	mg/L	0.0020	94.5	80	120			
Potassium	53.05	mg/L	1.0	96.4	80	120			
Selenium	0.4884	mg/L	0.050	97.7	80	120			
Silver	0.4927	mg/L	0.0050	98.5	80	120			
Sodium	49.00	mg/L	1.0	97.0	80	120			
Zinc	0.4822	mg/L	0.050	96.4	80	120			
<b>Sample ID: LCS</b>		<b>LCS</b>							
					<b>Batch ID: R30124</b>		<b>Analysis Date:</b>		<b>9/8/2008 9:47:18 PM</b>
Selenium	0.5051	mg/L	0.050	101	80	120			
<b>Sample ID: LCS</b>		<b>LCS</b>							
					<b>Batch ID: R30131</b>		<b>Analysis Date:</b>		<b>9/9/2008 2:02:14 PM</b>
Selenium	0.5386	mg/L	0.050	108	80	120			
<b>Sample ID: 0808316-04EMS</b>		<b>MS</b>							
					<b>Batch ID: R30098</b>		<b>Analysis Date:</b>		<b>9/5/2008 4:31:58 PM</b>
Arsenic	0.5186	mg/L	0.020	104	75	125			
Cadmium	0.4926	mg/L	0.0020	98.5	75	125			
Chromium	0.4916	mg/L	0.0060	98.3	75	125			
Copper	0.5195	mg/L	0.0060	104	75	125			
Lead	0.4766	mg/L	0.0050	94.6	75	125			
Magnesium	91.39	mg/L	1.0	98.7	75	125			
Potassium	58.82	mg/L	1.0	101	75	125			
Silver	0.4885	mg/L	0.0050	97.7	75	125			
Zinc	0.5528	mg/L	0.050	98.1	75	125			
<b>Sample ID: 0808316-04EMS</b>		<b>MS</b>							
					<b>Batch ID: R30098</b>		<b>Analysis Date:</b>		<b>9/5/2008 6:15:26 PM</b>
Barium	4.690	mg/L	0.10	117	75	125			
Calcium	325.8	mg/L	5.0	92.6	75	125			
<b>Sample ID: 0808316-04EMS</b>		<b>MS</b>							
					<b>Batch ID: R30131</b>		<b>Analysis Date:</b>		<b>9/9/2008 2:25:42 PM</b>
Selenium	2.782	mg/L	0.25	111	75	125			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Refinery Wells Annual 2008

Work Order: 0808316

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA 6010B: Total Recoverable Metals

Sample ID: 0808316-02DMSD      MSD      Batch ID: 16920      Analysis Date: 9/3/2008 3:23:18 PM

Arsenic	0.5345	mg/L	0.020	107	75	125	7.94	20
Barium	0.4971	mg/L	0.010	96.6	75	125	2.78	20
Cadmium	0.5127	mg/L	0.0020	103	75	125	3.17	20
Chromium	0.4917	mg/L	0.0060	98.3	75	125	2.47	20
Lead	0.4734	mg/L	0.0050	93.5	75	125	3.39	20
Selenium	0.4970	mg/L	0.050	99.4	75	125	3.10	20
Silver	0.5264	mg/L	0.0050	105	75	125	3.90	20

Sample ID: MB-16920      MBLK      Batch ID: 16920      Analysis Date: 9/3/2008 2:05:00 PM

Arsenic	ND	mg/L	0.020					
Barium	ND	mg/L	0.010					
Cadmium	ND	mg/L	0.0020					
Chromium	ND	mg/L	0.0060					
Lead	ND	mg/L	0.0050					
Selenium	ND	mg/L	0.050					
Silver	ND	mg/L	0.0050					

Sample ID: LCS-16920      LCS      Batch ID: 16920      Analysis Date: 9/3/2008 2:07:22 PM

Arsenic	0.5251	mg/L	0.020	105	80	120		
Barium	0.4887	mg/L	0.010	97.7	80	120		
Cadmium	0.4999	mg/L	0.0020	100	80	120		
Chromium	0.5075	mg/L	0.0060	102	80	120		
Lead	0.4964	mg/L	0.0050	99.3	80	120		
Selenium	0.4892	mg/L	0.050	97.8	80	120		
Silver	0.5013	mg/L	0.0050	100	80	120		

Sample ID: 0808316-02DMS      MS      Batch ID: 16920      Analysis Date: 9/3/2008 3:19:22 PM

Arsenic	0.5787	mg/L	0.020	116	75	125		
Barium	0.5111	mg/L	0.010	99.4	75	125		
Cadmium	0.5292	mg/L	0.0020	106	75	125		
Chromium	0.5040	mg/L	0.0060	101	75	125		
Lead	0.4898	mg/L	0.0050	96.8	75	125		
Selenium	0.4818	mg/L	0.050	96.4	75	125		
Silver	0.5474	mg/L	0.0050	109	75	125		

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

## Login Report

Customer Name: HALL ENVIRONMENTAL ANALYSIS LAB

Order ID: 080821018

Purchase Order:

Order Date: 8/21/2008

Project ID:

Project Name: 0808316

Comment:

Sample #:	080821018-001	Customer Sample #:	0808316-01F / RW #23	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/19/2008
Quantity:	1	Matrix:	Water	Date Received:	8/21/2008 10:45:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	9/3/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080821018-002	Customer Sample #:	0808316-02F / MVV #44	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/19/2008
Quantity:	1	Matrix:	Water	Date Received:	8/21/2008 10:45:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	9/3/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080821018-003	Customer Sample #:	0808316-03F / RW #15	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/19/2008
Quantity:	1	Matrix:	Water	Date Received:	8/21/2008 10:45:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	9/3/2008	<u>Normal (6-10 Days)</u>	

Sample #:	080821018-004	Customer Sample #:	0808316-04F / MVV #40	Site:	
Recv'd:	<input checked="" type="checkbox"/>	Collector:		Date Collected:	8/19/2008
Quantity:	1	Matrix:	Water	Date Received:	8/21/2008 10:45:00 A
Comment:					
Test	Test Group	Method	Due Date	Priority	
DISSOLVED URANIUM BY 6		EPA 6020A	9/3/2008	<u>Normal (6-10 Days)</u>	

**Customer Name:** HALL ENVIRONMENTAL ANALYSIS LAB

**Order ID:** 080821018

**Purchase Order:**

**Order Date:** 8/21/2008

**Project ID:**

**Project Name:** 0808316

**Comment:**

---

### SAMPLE CONDITION RECORD

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Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature inside the cooler?	6.2
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	N/A
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes

080821 018 **HALT** Last Due 9/3/2008  
 1st SAMPL 8/19/2008 1st RCVD 8/21/2008  
**CHAIN-OF-CUST** 0808316

Hall Environmental Analysis Laboratory, Inc.  
 4901 Hawkins NE, Suite D  
 Albuquerque, New Mexico 87109-4372  
 TEL: 5053453975 FAX: 5053454107

Subcontractor: Anatek Labs, Inc.  
 1282 Alturas Dr  
 Moscow, ID 83843  
 TEL: (208) 883-2839 Project Name: 0808316  
 FAX: (208) 882-9246  
 Acct #:

20-Aug-08

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0808316-01F	RV#23	Aqueous	8/19/2008 10:00:00 AM	125HDPHNO3	SEE BELOW
0808316-02F	MMV #44	Aqueous	8/19/2008 10:25:00 AM	125HDPHNO3	SEE BELOW
0808316-03F	RV#15	Aqueous	8/19/2008 11:05:00 AM	125HDPHNO3	SEE BELOW
0808316-04F	MMV #40	Aqueous	8/19/2008 11:20:00 AM	125HDPHNO3	SEE BELOW

MVB5

ANALYTICAL COMMENTS: \*\*\*LEVEL 4 QA/QC, DISSOLVED U BY 6020, PLEASE REPORT @ 0.001 mg/L

Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@halleenvironmental.com. Thank you.

Relinquished by: [Signature] Date/Time: 8/20/08  
 Relinquished by: [Signature] Date/Time: 8/20/08  
 Recd: [Signature] Recd: [Signature]

ANATEK LABS RECEIVING LIST

RECEIVED INTACT ☒ LABELS & CHAINS AGREE ☒ NOTED SPACE ☒ PRESERVATIVE: AC03 TEMP: 10.2°C

NUMBER OF CONTAINERS: 4 SHIPPED VIA: Fedex  
 DATE & TIME: 8-21-08 12:45 INSPECTED BY: [Signature]

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/20/2008

Work Order Number 0808316

Received by: AT

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☒

No ☐

N/A ☐

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

Container/Temp Blank temperature?

3°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

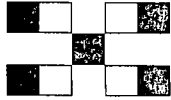
Contacted by:

Regarding:

Comments:

Corrective Action





**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**  
4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.345.4107  
www.hallenvironmental.com

## CHAIN-OF-CUSTODY RECORD

Client: Western Refining - Bloomfield

Address: #50 Road 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

Fax #: 505-632-3911

Date

Time

Matrix

Sample I.D. No.

Number/Volume

Preservative

HgCl<sub>2</sub>

HNO<sub>3</sub>

HEAL No.

0808316

6-10A

1-ltr Amber

1-250ml

1-500ml

1-500ml

1-250ml

6-10A

1-ltr Amber

1-250ml

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4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.345.4107  
[www.hallenvironmental.com](http://www.hallenvironmental.com)

# ANALYSIS REQUEST

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.345.4107  
[www.hallenviro.com](http://www.hallenviro.com)

# ANALYSIS REQUEST

CHAIN-OF-CUSTODY RECORD					QA/QC Package:		
					Std <input type="checkbox"/>	Level 4 <input checked="" type="checkbox"/>	
					Other:		
Client: Western Refining - Bloomfield					Project Name: Refinery Wells -		
Address: #50 Road 4990					Annual 2008		
Bloomfield, NM					Project #:		
87413					Project Manager:		
Phone #: 505-632-4161					Sampler: Bob/Lindy		
Fax #: 505-632-3911					Sample Temperature: 3--		
Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative		HEAL No.
8-19-08	1040A	H2O	Field Blank	3-VOL	HgCl <sub>2</sub>	HNO <sub>3</sub>	0808316
			Trip Blank				-5
							-6
Date: 8-19-08	Time: 1340p	Relinquished By: Cindy Hurtado	Relinquished By: (Signature)	Received By: (Signature)	8/20/08		
Date:	Time:	Relinquished By: (Signature)	Relinquished By: (Signature)	Received By: (Signature)	8/30		

COVER LETTER

Monday, September 08, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: San Juan River Semi-Annual Aug 5 2008

Order No.: 0808072

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 5 sample(s) on 8/6/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 08-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River Semi-Annual Aug 5 2008  
**Lab Order:** 0808072

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808072-01A	North of #45	16727	EPA Method 8015B: Diesel Range	8/5/2008 9:30:00 AM
0808072-01A	North of #45	R29757	EPA Method 8260: Volatiles Short List	8/5/2008 9:30:00 AM
0808072-01A	North of #45	R29664	EPA Method 8015B: Gasoline Range	8/5/2008 9:30:00 AM
0808072-01C	North of #45	16766	EPA 6010B: Total Recoverable Metals	8/5/2008 9:30:00 AM
0808072-01C	North of #45	16832	EPA Method 7470: Mercury	8/5/2008 9:30:00 AM
0808072-01D	North of #45	R29657	EPA Method 300.0: Anions	8/5/2008 9:30:00 AM
0808072-01D	North of #45	R29657	EPA Method 300.0: Anions	8/5/2008 9:30:00 AM
0808072-01D	North of #45	16698	SM 2540C Total Dissolved Solids	8/5/2008 9:30:00 AM
0808072-01D	North of #45	R29684	SM4500-H+B: pH	8/5/2008 9:30:00 AM
0808072-01D	North of #45	R29685	EPA 120.1: Specific Conductance	8/5/2008 9:30:00 AM
0808072-01D	North of #45	R29775	SM 2320B: Alkalinity	8/5/2008 9:30:00 AM
0808072-01D	North of #45	R29831	Carbon Dioxide	8/5/2008 9:30:00 AM
0808072-01E	North of #45	R	EPA Method 6010B: Dissolved Metals	8/5/2008 9:30:00 AM
0808072-01E	North of #45	R29902	EPA Method 6010B: Dissolved Metals	8/5/2008 9:30:00 AM
0808072-02A	Upstream	R29757	EPA Method 8260: Volatiles Short List	8/5/2008 10:20:00 AM
0808072-02A	Upstream	R29664	EPA Method 8015B: Gasoline Range	8/5/2008 10:20:00 AM
0808072-02A	Upstream	16727	EPA Method 8015B: Diesel Range	8/5/2008 10:20:00 AM
0808072-02C	Upstream	16766	EPA 6010B: Total Recoverable Metals	8/5/2008 10:20:00 AM
0808072-02C	Upstream	16832	EPA Method 7470: Mercury	8/5/2008 10:20:00 AM
0808072-02D	Upstream	R29657	EPA Method 300.0: Anions	8/5/2008 10:20:00 AM
0808072-02D	Upstream	R29657	EPA Method 300.0: Anions	8/5/2008 10:20:00 AM
0808072-02D	Upstream	16698	SM 2540C Total Dissolved Solids	8/5/2008 10:20:00 AM
0808072-02D	Upstream	R29684	SM4500-H+B: pH	8/5/2008 10:20:00 AM
0808072-02D	Upstream	R29685	EPA 120.1: Specific Conductance	8/5/2008 10:20:00 AM
0808072-02D	Upstream	R29775	SM 2320B: Alkalinity	8/5/2008 10:20:00 AM
0808072-02D	Upstream	R29831	Carbon Dioxide	8/5/2008 10:20:00 AM
0808072-02E	Upstream	R29902	EPA Method 6010B: Dissolved Metals	8/5/2008 10:20:00 AM
0808072-02E	Upstream	R	EPA Method 6010B: Dissolved Metals	8/5/2008 10:20:00 AM
0808072-03A	Downstream	R29757	EPA Method 8260: Volatiles Short List	8/5/2008 11:00:00 AM
0808072-03A	Downstream	R29664	EPA Method 8015B: Gasoline Range	8/5/2008 11:00:00 AM
0808072-03A	Downstream	16727	EPA Method 8015B: Diesel Range	8/5/2008 11:00:00 AM
0808072-03C	Downstream	16766	EPA 6010B: Total Recoverable Metals	8/5/2008 11:00:00 AM
0808072-03C	Downstream	16832	EPA Method 7470: Mercury	8/5/2008 11:00:00 AM
0808072-03D	Downstream	R29657	EPA Method 300.0: Anions	8/5/2008 11:00:00 AM
0808072-03D	Downstream	R29657	EPA Method 300.0: Anions	8/5/2008 11:00:00 AM
0808072-03D	Downstream	16708	SM 2540C Total Dissolved Solids	8/5/2008 11:00:00 AM
0808072-03D	Downstream	R29684	SM4500-H+B: pH	8/5/2008 11:00:00 AM
0808072-03D	Downstream	R29685	EPA 120.1: Specific Conductance	8/5/2008 11:00:00 AM

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River Semi-Annual Aug 5 2008  
**Lab Order:** 0808072

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808072-03D	Downstream	R29795	SM 2320B: Alkalinity	8/5/2008 11:00:00 AM
0808072-03D	Downstream	R29831	Carbon Dioxide	8/5/2008 11:00:00 AM
0808072-03E	Downstream	R29902	EPA Method 6010B: Dissolved Metals	8/5/2008 11:00:00 AM
0808072-03E	Downstream	R	EPA Method 6010B: Dissolved Metals	8/5/2008 11:00:00 AM
0808072-04A	North of #46	16727	EPA Method 8015B: Diesel Range	8/5/2008 9:45:00 AM
0808072-04A	North of #46	R29757	EPA Method 8260: Volatiles Short List	8/5/2008 9:45:00 AM
0808072-04A	North of #46	R29664	EPA Method 8015B: Gasoline Range	8/5/2008 9:45:00 AM
0808072-04C	North of #46	16832	EPA Method 7470: Mercury	8/5/2008 9:45:00 AM
0808072-04C	North of #46	16766	EPA 6010B: Total Recoverable Metals	8/5/2008 9:45:00 AM
0808072-04D	North of #46	R29657	EPA Method 300.0: Anions	8/5/2008 9:45:00 AM
0808072-04D	North of #46	R29657	EPA Method 300.0: Anions	8/5/2008 9:45:00 AM
0808072-04D	North of #46	R29684	SM4500-H+B: pH	8/5/2008 9:45:00 AM
0808072-04D	North of #46	R29685	EPA 120.1: Specific Conductance	8/5/2008 9:45:00 AM
0808072-04D	North of #46	16733	SM 2540C Total Dissolved Solids	8/5/2008 9:45:00 AM
0808072-04D	North of #46	R29795	SM 2320B: Alkalinity	8/5/2008 9:45:00 AM
0808072-04D	North of #46	R29831	Carbon Dioxide	8/5/2008 9:45:00 AM
0808072-04E	North of #46	R29902	EPA Method 6010B: Dissolved Metals	8/5/2008 9:45:00 AM
0808072-04E	North of #46	R	EPA Method 6010B: Dissolved Metals	8/5/2008 9:45:00 AM
0808072-05A	Downstream Dup	R29757	EPA Method 8260: Volatiles Short List	8/5/2008 11:00:00 AM
0808072-05A	Downstream Dup	R29664	EPA Method 8015B: Gasoline Range	8/5/2008 11:00:00 AM
0808072-05A	Downstream Dup	16727	EPA Method 8015B: Diesel Range	8/5/2008 11:00:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 08-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808072  
**Project:** San Juan River Semi-Annual Aug 5 2008  
**Lab ID:** 0808072-01

**Client Sample ID:** North of #45  
**Collection Date:** 8/5/2008 9:30:00 AM  
**Date Received:** 8/6/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/11/2008 5:06:10 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/11/2008 5:06:10 PM
Surr: DNOP	112	58-140		%REC	1	8/11/2008 5:06:10 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/7/2008 6:51:51 PM
Surr: BFB	93.7	79.2-121		%REC	1	8/7/2008 6:51:51 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: IC
Fluoride	0.20	0.10		mg/L	1	8/7/2008 12:24:33 AM
Chloride	2.9	0.10		mg/L	1	8/7/2008 12:24:33 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/7/2008 12:24:33 AM
Bromide	ND	0.10		mg/L	1	8/7/2008 12:24:33 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/7/2008 12:24:33 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2008 12:24:33 AM
Sulfate	59	0.50		mg/L	1	8/7/2008 12:24:33 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/20/2008 5:49:51 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/25/2008 9:48:44 AM
Barium	0.081	0.020		mg/L	1	8/25/2008 9:48:44 AM
Cadmium	ND	0.0020		mg/L	1	8/25/2008 9:48:44 AM
Calcium	34	1.0		mg/L	1	8/25/2008 9:48:44 AM
Chromium	ND	0.0060		mg/L	1	8/25/2008 9:48:44 AM
Copper	ND	0.0060		mg/L	1	8/25/2008 9:48:44 AM
Iron	0.068	0.020		mg/L	1	8/25/2008 9:48:44 AM
Lead	ND	0.0050		mg/L	1	8/25/2008 9:48:44 AM
Magnesium	5.7	1.0		mg/L	1	8/25/2008 9:48:44 AM
Manganese	0.012	0.0020		mg/L	1	8/25/2008 9:48:44 AM
Potassium	1.8	1.0		mg/L	1	8/25/2008 9:48:44 AM
Selenium	ND	0.050		mg/L	1	8/25/2008 9:48:44 AM
Silver	ND	0.0050		mg/L	1	8/25/2008 9:48:44 AM
Sodium	19	1.0		mg/L	1	8/26/2008 4:59:04 PM
Zinc	ND	0.050		mg/L	1	8/25/2008 9:48:44 AM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/15/2008 4:32:35 PM
Barium	0.17	0.020		mg/L	1	8/15/2008 4:32:35 PM
Cadmium	ND	0.0020		mg/L	1	8/15/2008 4:32:35 PM
Chromium	ND	0.0060		mg/L	1	8/15/2008 4:32:35 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 08-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808072  
**Project:** San Juan River Semi-Annual Aug 5 2008  
**Lab ID:** 0808072-01

**Client Sample ID:** North of #45  
**Collection Date:** 8/5/2008 9:30:00 AM  
**Date Received:** 8/6/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Lead	ND	0.0050		mg/L	1	8/15/2008 4:32:35 PM
Selenium	ND	0.050		mg/L	1	8/15/2008 4:32:35 PM
Silver	ND	0.0050		mg/L	1	8/15/2008 4:32:35 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/13/2008 8:54:03 PM
Toluene	ND	1.0		µg/L	1	8/13/2008 8:54:03 PM
Ethylbenzene	ND	1.0		µg/L	1	8/13/2008 8:54:03 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	8/13/2008 8:54:03 PM
Xylenes, Total	ND	3.0		µg/L	1	8/13/2008 8:54:03 PM
Surr: 4-Bromofluorobenzene	98.3	80.4-119		%REC	1	8/13/2008 8:54:03 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO <sub>3</sub> )	91	20		mg/L CaCO <sub>3</sub>	1	8/14/2008
Carbonate	ND	2.0		mg/L CaCO <sub>3</sub>	1	8/14/2008
Bicarbonate	91	20		mg/L CaCO <sub>3</sub>	1	8/14/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	81	1.0		mg CO <sub>2</sub> /L	1	8/19/2008
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: KMS
Specific Conductance	290	0.010		µmhos/cm	1	8/8/2008
<b>SM4500-H+B: PH</b>						Analyst: KMS
pH	8.01	0.1		pH units	1	8/8/2008
<b>SM 2540C TOTAL DISSOLVED SOLIDS</b>						Analyst: KMS
Total Dissolved Solids	200	20		mg/L	1	8/6/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 08-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808072  
**Project:** San Juan River Semi-Annual Aug 5 2008  
**Lab ID:** 0808072-02

**Client Sample ID:** Upstream  
**Collection Date:** 8/5/2008 10:20:00 AM  
**Date Received:** 8/6/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/11/2008 5:40:51 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/11/2008 5:40:51 PM
Surr: DNOP	117	58-140		%REC	1	8/11/2008 5:40:51 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/7/2008 7:21:51 PM
Surr: BFB	98.3	79.2-121		%REC	1	8/7/2008 7:21:51 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: IC
Fluoride	0.24	0.10		mg/L	1	8/7/2008 12:59:23 AM
Chloride	5.5	0.10		mg/L	1	8/7/2008 12:59:23 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/7/2008 12:59:23 AM
Bromide	ND	0.10		mg/L	1	8/7/2008 12:59:23 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/7/2008 12:59:23 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2008 12:59:23 AM
Sulfate	130	5.0		mg/L	10	8/7/2008 1:16:47 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/20/2008 5:51:34 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/25/2008 9:51:46 AM
Barium	0.081	0.020		mg/L	1	8/25/2008 9:51:46 AM
Cadmium	ND	0.0020		mg/L	1	8/25/2008 9:51:46 AM
Calcium	39	1.0		mg/L	1	8/25/2008 9:51:46 AM
Chromium	ND	0.0060		mg/L	1	8/25/2008 9:51:46 AM
Copper	ND	0.0060		mg/L	1	8/25/2008 9:51:46 AM
Iron	0.074	0.020		mg/L	1	8/25/2008 9:51:46 AM
Lead	ND	0.0050		mg/L	1	8/25/2008 9:51:46 AM
Magnesium	7.0	1.0		mg/L	1	8/25/2008 9:51:46 AM
Manganese	0.073	0.0020		mg/L	1	8/25/2008 9:51:46 AM
Potassium	2.0	1.0		mg/L	1	8/25/2008 9:51:46 AM
Selenium	ND	0.050		mg/L	1	8/25/2008 9:51:46 AM
Silver	ND	0.0050		mg/L	1	8/25/2008 9:51:46 AM
Sodium	49	1.0		mg/L	1	8/26/2008 5:01:19 PM
Zinc	ND	0.050		mg/L	1	8/25/2008 9:51:46 AM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/15/2008 4:35:31 PM
Barium	0.13	0.020		mg/L	1	8/15/2008 4:35:31 PM
Cadmium	ND	0.0020		mg/L	1	8/15/2008 4:35:31 PM
Chromium	ND	0.0060		mg/L	1	8/15/2008 4:35:31 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 08-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808072  
**Project:** San Juan River Semi-Annual Aug 5 2008  
**Lab ID:** 0808072-02

**Client Sample ID:** Upstream  
**Collection Date:** 8/5/2008 10:20:00 AM  
**Date Received:** 8/6/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Lead	0.0065	0.0050		mg/L	1	8/15/2008 4:35:31 PM
Selenium	ND	0.050		mg/L	1	8/15/2008 4:35:31 PM
Silver	ND	0.0050		mg/L	1	8/15/2008 4:35:31 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/13/2008 9:22:46 PM
Toluene	ND	1.0		µg/L	1	8/13/2008 9:22:46 PM
Ethylbenzene	ND	1.0		µg/L	1	8/13/2008 9:22:46 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	8/13/2008 9:22:46 PM
Xylenes, Total	ND	3.0		µg/L	1	8/13/2008 9:22:46 PM
Surr: 4-Bromofluorobenzene	104	80.4-119		%REC	1	8/13/2008 9:22:46 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	95	20		mg/L CaCO3	1	8/14/2008
Carbonate	ND	2.0		mg/L CaCO3	1	8/14/2008
Bicarbonate	95	20		mg/L CaCO3	1	8/14/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	85	1.0		mg CO2/L	1	8/19/2008
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: KMS
Specific Conductance	450	0.010		µmhos/cm	1	8/8/2008
<b>SM4500-H+B: PH</b>						Analyst: KMS
pH	8.01	0.1		pH units	1	8/8/2008
<b>SM 2540C TOTAL DISSOLVED SOLIDS</b>						Analyst: KMS
Total Dissolved Solids	360	40		mg/L	1	8/6/2008

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 08-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808072  
**Project:** San Juan River Semi-Annual Aug 5 2008  
**Lab ID:** 0808072-03

**Client Sample ID:** Downstream  
**Collection Date:** 8/5/2008 11:00:00 AM  
**Date Received:** 8/6/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/11/2008 6:15:33 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/11/2008 6:15:33 PM
Surr: DNOP	110	58-140		%REC	1	8/11/2008 6:15:33 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/7/2008 7:51:53 PM
Surr: BFB	92.5	79.2-121		%REC	1	8/7/2008 7:51:53 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: IC
Fluoride	0.19	0.10		mg/L	1	8/7/2008 1:34:12 AM
Chloride	3.1	0.10		mg/L	1	8/7/2008 1:34:12 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/7/2008 1:34:12 AM
Bromide	ND	0.10		mg/L	1	8/7/2008 1:34:12 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/7/2008 1:34:12 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2008 1:34:12 AM
Sulfate	62	0.50		mg/L	1	8/7/2008 1:34:12 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/20/2008 6:00:34 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/25/2008 9:54:51 AM
Barium	0.080	0.020		mg/L	1	8/25/2008 9:54:51 AM
Cadmium	ND	0.0020		mg/L	1	8/25/2008 9:54:51 AM
Calcium	34	1.0		mg/L	1	8/25/2008 9:54:51 AM
Chromium	ND	0.0060		mg/L	1	8/25/2008 9:54:51 AM
Copper	ND	0.0060		mg/L	1	8/25/2008 9:54:51 AM
Iron	0.090	0.020		mg/L	1	8/25/2008 9:54:51 AM
Lead	ND	0.0050		mg/L	1	8/25/2008 9:54:51 AM
Magnesium	5.5	1.0		mg/L	1	8/25/2008 9:54:51 AM
Manganese	0.012	0.0020		mg/L	1	8/25/2008 9:54:51 AM
Potassium	1.9	1.0		mg/L	1	8/25/2008 9:54:51 AM
Selenium	ND	0.050		mg/L	1	8/25/2008 9:54:51 AM
Silver	ND	0.0050		mg/L	1	8/25/2008 9:54:51 AM
Sodium	20	1.0		mg/L	1	8/26/2008 5:03:33 PM
Zinc	ND	0.050		mg/L	1	8/25/2008 9:54:51 AM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/15/2008 4:38:23 PM
Barium	0.16	0.020		mg/L	1	8/15/2008 4:38:23 PM
Cadmium	ND	0.0020		mg/L	1	8/15/2008 4:38:23 PM
Chromium	ND	0.0060		mg/L	1	8/15/2008 4:38:23 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 08-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808072  
**Project:** San Juan River Semi-Annual Aug 5 2008  
**Lab ID:** 0808072-03

**Client Sample ID:** Downstream  
**Collection Date:** 8/5/2008 11:00:00 AM  
**Date Received:** 8/6/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Lead	ND	0.0050		mg/L	1	8/15/2008 4:38:23 PM
Selenium	ND	0.050		mg/L	1	8/15/2008 4:38:23 PM
Silver	ND	0.0050		mg/L	1	8/15/2008 4:38:23 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/13/2008 9:51:30 PM
Toluene	ND	1.0		µg/L	1	8/13/2008 9:51:30 PM
Ethylbenzene	ND	1.0		µg/L	1	8/13/2008 9:51:30 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	8/13/2008 9:51:30 PM
Xylenes, Total	ND	3.0		µg/L	1	8/13/2008 9:51:30 PM
Surr: 4-Bromofluorobenzene	99.8	80.4-119		%REC	1	8/13/2008 9:51:30 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO <sub>3</sub> )	90	20		mg/L CaCO <sub>3</sub>	1	8/15/2008
Carbonate	ND	2.0		mg/L CaCO <sub>3</sub>	1	8/15/2008
Bicarbonate	90	20		mg/L CaCO <sub>3</sub>	1	8/15/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	80	1.0		mg CO <sub>2</sub> /L	1	8/19/2008
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: KMS
Specific Conductance	300	0.010		µmhos/cm	1	8/8/2008
<b>SM4500-H+B: PH</b>						Analyst: KMS
pH	8.09	0.1		pH units	1	8/8/2008
<b>SM 2540C TOTAL DISSOLVED SOLIDS</b>						Analyst: KMS
Total Dissolved Solids	200	20		mg/L	1	8/7/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 08-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808072  
 Project: San Juan River Semi-Annual Aug 5 2008  
 Lab ID: 0808072-04

Client Sample ID: North of #46  
 Collection Date: 8/5/2008 9:45:00 AM  
 Date Received: 8/6/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/11/2008 6:50:12 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/11/2008 6:50:12 PM
Surr: DNOP	114	58-140		%REC	1	8/11/2008 6:50:12 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/7/2008 8:21:44 PM
Surr: BFB	91.3	79.2-121		%REC	1	8/7/2008 8:21:44 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: IC
Fluoride	0.20	0.10		mg/L	1	8/7/2008 2:09:01 AM
Chloride	3.0	0.10		mg/L	1	8/7/2008 2:09:01 AM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/7/2008 2:09:01 AM
Bromide	ND	0.10		mg/L	1	8/7/2008 2:09:01 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/7/2008 2:09:01 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/7/2008 2:09:01 AM
Sulfate	60	0.50		mg/L	1	8/7/2008 2:09:01 AM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	8/20/2008 6:02:20 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	8/25/2008 9:57:53 AM
Barium	0.077	0.020		mg/L	1	8/25/2008 9:57:53 AM
Cadmium	ND	0.0020		mg/L	1	8/25/2008 9:57:53 AM
Calcium	33	1.0		mg/L	1	8/25/2008 9:57:53 AM
Chromium	ND	0.0060		mg/L	1	8/25/2008 9:57:53 AM
Copper	ND	0.0060		mg/L	1	8/25/2008 9:57:53 AM
Iron	0.059	0.020		mg/L	1	8/25/2008 9:57:53 AM
Lead	ND	0.0050		mg/L	1	8/25/2008 9:57:53 AM
Magnesium	5.5	1.0		mg/L	1	8/25/2008 9:57:53 AM
Manganese	0.0084	0.0020		mg/L	1	8/25/2008 9:57:53 AM
Potassium	1.8	1.0		mg/L	1	8/25/2008 9:57:53 AM
Selenium	ND	0.050		mg/L	1	8/25/2008 9:57:53 AM
Silver	ND	0.0050		mg/L	1	8/25/2008 9:57:53 AM
Sodium	19	1.0		mg/L	1	8/26/2008 5:05:47 PM
Zinc	ND	0.050		mg/L	1	8/25/2008 9:57:53 AM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	8/15/2008 4:41:14 PM
Barium	0.16	0.020		mg/L	1	8/15/2008 4:41:14 PM
Cadmium	ND	0.0020		mg/L	1	8/15/2008 4:41:14 PM
Chromium	ND	0.0060		mg/L	1	8/15/2008 4:41:14 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 08-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808072  
**Project:** San Juan River Semi-Annual Aug 5 2008  
**Lab ID:** 0808072-04

**Client Sample ID:** North of #46  
**Collection Date:** 8/5/2008 9:45:00 AM  
**Date Received:** 8/6/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Lead	0.0057	0.0050		mg/L	1	8/15/2008 4:41:14 PM
Selenium	ND	0.050		mg/L	1	8/15/2008 4:41:14 PM
Silver	ND	0.0050		mg/L	1	8/15/2008 4:41:14 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/13/2008 10:20:12 PM
Toluene	ND	1.0		µg/L	1	8/13/2008 10:20:12 PM
Ethylbenzene	ND	1.0		µg/L	1	8/13/2008 10:20:12 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	8/13/2008 10:20:12 PM
Xylenes, Total	ND	3.0		µg/L	1	8/13/2008 10:20:12 PM
Surr: 4-Bromofluorobenzene	101	80.4-119		%REC	1	8/13/2008 10:20:12 PM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO3)	89	20		mg/L CaCO3	1	8/15/2008
Carbonate	ND	2.0		mg/L CaCO3	1	8/15/2008
Bicarbonate	89	20		mg/L CaCO3	1	8/15/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	80	1.0		mg CO2/L	1	8/19/2008
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: KMS
Specific Conductance	300	0.010		µmhos/cm	1	8/8/2008
<b>SM4500-H+B: PH</b>						Analyst: KMS
pH	8.05	0.1		pH units	1	8/8/2008
<b>SM 2540C TOTAL DISSOLVED SOLIDS</b>						Analyst: KMS
Total Dissolved Solids	190	20		mg/L	1	8/11/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 08-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808072  
**Project:** San Juan River Semi-Annual Aug 5 2008  
**Lab ID:** 0808072-05

**Client Sample ID:** Downstream Dup  
**Collection Date:** 8/5/2008 11:00:00 AM  
**Date Received:** 8/6/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/11/2008 7:24:50 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/11/2008 7:24:50 PM
Surr: DNOP	115	58-140		%REC	1	8/11/2008 7:24:50 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/7/2008 8:51:49 PM
Surr: BFB	90.0	79.2-121		%REC	1	8/7/2008 8:51:49 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/13/2008 10:49:01 PM
Toluene	ND	1.0		µg/L	1	8/13/2008 10:49:01 PM
Ethylbenzene	ND	1.0		µg/L	1	8/13/2008 10:49:01 PM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	8/13/2008 10:49:01 PM
Xylenes, Total	ND	3.0		µg/L	1	8/13/2008 10:49:01 PM
Surr: 4-Bromofluorobenzene	98.1	80.4-119		%REC	1	8/13/2008 10:49:01 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

08-Sep-08

Lab Order: 0808072  
 Client: Western Refining Southwest, Inc.  
 Project: San Juan River Semi-Annual Aug 5

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808072-01A	North of #45	8/5/2008 9:30:00 AM	Aqueous	EPA Method 8015B: Diesel Range	16727	8/11/2008	8/11/2008
0808072-01C				EPA Method 8015B: Gasoline Range	R29664		8/7/2008
				EPA Method 8260: Volatiles Short List	R29757		8/13/2008
				EPA 6010B: Total Recoverable Metals	16766	8/13/2008	8/15/2008
				EPA Method 7470: Mercury	16832	8/20/2008	8/20/2008
0808072-01D				Carbon Dioxide	R29831		8/19/2008
				EPA 120.1: Specific Conductance	R29685		8/8/2008
				EPA Method 300.0: Anions	R29657		8/7/2008
				EPA Method 300.0: Anions	R29657		8/7/2008
				SM 2320B: Alkalinity	R29775		8/14/2008
				SM 2540C Total Dissolved Solids	16698	8/6/2008	8/6/2008
0808072-01E				SM4500-H+B: pH	R29684		8/8/2008
				EPA Method 6010B: Dissolved Metals	R		8/26/2008
				EPA Method 6010B: Dissolved Metals	R29902		8/25/2008
				EPA Method 8015B: Diesel Range	16727	8/11/2008	8/11/2008
0808072-02A	Upstream	8/5/2008 10:20:00 AM		EPA Method 8015B: Gasoline Range	R29664		8/7/2008
				EPA Method 8260: Volatiles Short List	R29757		8/13/2008
				EPA 6010B: Total Recoverable Metals	16766	8/13/2008	8/15/2008
				EPA Method 7470: Mercury	16832	8/20/2008	8/20/2008
0808072-02C				Carbon Dioxide	R29831		8/19/2008
				EPA 120.1: Specific Conductance	R29685		8/8/2008
				EPA Method 300.0: Anions	R29657		8/7/2008
				EPA Method 300.0: Anions	R29657		8/7/2008
				SM 2320B: Alkalinity	R29775		8/14/2008
				SM 2540C Total Dissolved Solids	16698	8/6/2008	8/6/2008



# Hall Environmental Analysis Laboratory, Inc.

08-Sep-08

Lab Order: 0808072

Client: Western Refining Southwest, Inc.

Project: San Juan River Semi-Annual Aug 5

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808072-02D	Upstream	8/5/2008 10:20:00 AM	Aqueous	SM4500-H+B: pH	R29684		8/8/2008
0808072-02E				EPA Method 6010B: Dissolved Metals	R29902		8/25/2008
				EPA Method 6010B: Dissolved Metals	R		8/26/2008
0808072-03A	Downstream	8/5/2008 11:00:00 AM		EPA Method 8015B: Diesel Range	16727	8/11/2008	8/11/2008
				EPA Method 8015B: Gasoline Range	R29664		8/7/2008
				EPA Method 8260: Volatiles Short List	R29757		8/13/2008
0808072-03C				EPA 6010B: Total Recoverable Metals	16766	8/13/2008	8/15/2008
				EPA Method 7470: Mercury	16832	8/20/2008	8/20/2008
0808072-03D				Carbon Dioxide	R29831		8/19/2008
				EPA 120.1: Specific Conductance	R29685		8/8/2008
				EPA Method 300.0: Anions	R29657		8/7/2008
				EPA Method 300.0: Anions	R29657		8/7/2008
				SM 2320B: Alkalinity	R29795		8/15/2008
				SM 2540C Total Dissolved Solids	16708	8/7/2008	8/7/2008
				SM4500-H+B: pH	R29684		8/8/2008
0808072-03E				EPA Method 6010B: Dissolved Metals	R29902		8/25/2008
				EPA Method 6010B: Dissolved Metals	R		8/26/2008
0808072-04A	North of #46	8/5/2008 9:45:00 AM		EPA Method 8015B: Diesel Range	16727	8/11/2008	8/11/2008
				EPA Method 8015B: Gasoline Range	R29664		8/7/2008
				EPA Method 8260: Volatiles Short List	R29757		8/13/2008
0808072-04C				EPA 6010B: Total Recoverable Metals	16766	8/13/2008	8/15/2008
				EPA Method 7470: Mercury	16832	8/20/2008	8/20/2008
0808072-04D				Carbon Dioxide	R29831		8/19/2008
				EPA 120.1: Specific Conductance	R29685		8/8/2008
				EPA Method 300.0: Anions	R29657		8/7/2008

# Hall Environmental Analysis Laboratory, Inc.

08-Sep-08

Lab Order: 0808072

Client: Western Refining Southwest, Inc.

Project: San Juan River Semi-Annual Aug 5

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808072-04D	North of #46	8/5/2008 9:45:00 AM	Aqueous	EPA Method 300.0: Anions	R29657		8/7/2008
				SM 2320B: Alkalinity	R29795		8/15/2008
				SM 2540C Total Dissolved Solids	16733	8/11/2008	8/11/2008
				SM4500-H+B: pH	R29684		8/8/2008
0808072-04E				EPA Method 6010B: Dissolved Metals	R29902		8/25/2008
				EPA Method 6010B: Dissolved Metals	R		8/26/2008
0808072-05A	Downstream Dup	8/5/2008 11:00:00 AM		EPA Method 8015B: Diesel Range	16727	8/11/2008	8/11/2008
				EPA Method 8015B: Gasoline Range	R29664		8/7/2008
				EPA Method 8260: Volatiles Short List	R29757		8/13/2008

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Semi-Annual Aug 5 2008

Work Order: 0808077

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 300.0: Anions</b>									
<b>Sample ID: 0808072-04DMSD</b>		<i>MSD</i>			<b>Batch ID: R29657</b>		<b>Analysis Date: 8/7/2008 3:36:04 AM</b>		
Fluoride	0.7226	mg/L	0.10	104	65.1	121	3.14	20	
Chloride	8.008	mg/L	0.10	101	70.5	114	1.21	20	
Nitrogen, Nitrite (As N)	1.010	mg/L	0.10	101	52.9	128	2.03	20	
Bromide	2.616	mg/L	0.10	105	75.6	132	2.31	20	
Nitrogen, Nitrate (As N)	2.511	mg/L	0.10	99.2	83.8	112	1.11	20	
Phosphorus, Orthophosphate (As P)	4.796	mg/L	0.50	95.9	77.6	118	2.26	20	
<b>Sample ID: MB</b>		<i>MBLK</i>			<b>Batch ID: R29657</b>		<b>Analysis Date: 8/6/2008 9:19:11 AM</b>		
Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Bromide	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						
<b>Sample ID: LCS</b>		<i>LCS</i>			<b>Batch ID: R29657</b>		<b>Analysis Date: 8/6/2008 9:36:35 AM</b>		
Fluoride	0.5338	mg/L	0.10	107	90	110			
Chloride	4.875	mg/L	0.10	97.5	90	110			
Nitrogen, Nitrite (As N)	1.008	mg/L	0.10	101	90	110			
Bromide	2.559	mg/L	0.10	102	90	110			
Nitrogen, Nitrate (As N)	2.458	mg/L	0.10	98.3	90	110			
Phosphorus, Orthophosphate (As P)	4.897	mg/L	0.50	97.9	90	110			
Sulfate	10.21	mg/L	0.50	102	90	110			
<b>Sample ID: 0808072-04DMS</b>		<i>MS</i>			<b>Batch ID: R29657</b>		<b>Analysis Date: 8/7/2008 3:18:39 AM</b>		
Fluoride	0.7003	mg/L	0.10	99.8	65.1	121			
Chloride	7.912	mg/L	0.10	99.2	70.5	114			
Nitrogen, Nitrite (As N)	0.9894	mg/L	0.10	98.9	52.9	128			
Bromide	2.557	mg/L	0.10	102	75.6	132			
Nitrogen, Nitrate (As N)	2.484	mg/L	0.10	98.1	83.8	112			
Phosphorus, Orthophosphate (As P)	4.689	mg/L	0.50	93.8	77.6	118			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Semi-Annual Aug 5 2008

Work Order: 0808072

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: SM 2320B: Alkalinity</b>									
Sample ID: 0808072-03DMSD		MSD			Batch ID: R29795	Analysis Date:			8/15/2008
Alkalinity, Total (As CaCO3)	171.0	mg/L CaC	20	101	80	120	1.77	20	
Sample ID: MB		MBLK			Batch ID: R29775	Analysis Date:			8/14/2008
Alkalinity, Total (As CaCO3)	ND	mg/L CaC	20						
Carbonate	ND	mg/L CaC	2.0						
Bicarbonate	ND	mg/L CaC	20						
Sample ID: MB		MBLK			Batch ID: R29795	Analysis Date:			8/15/2008
Alkalinity, Total (As CaCO3)	ND	mg/L CaC	20						
Carbonate	ND	mg/L CaC	2.0						
Bicarbonate	ND	mg/L CaC	20						
Sample ID: LCS		LCS			Batch ID: R29775	Analysis Date:			8/14/2008
Alkalinity, Total (As CaCO3)	81.00	mg/L CaC	20	98.8	80	120			
Sample ID: LCS		LCS			Batch ID: R29795	Analysis Date:			8/15/2008
Alkalinity, Total (As CaCO3)	81.00	mg/L CaC	20	100	80	120			
Sample ID: 0808072-03DMS		MS			Batch ID: R29795	Analysis Date:			8/15/2008
Alkalinity, Total (As CaCO3)	168.0	mg/L CaC	20	97.5	80	120			
<b>Method: EPA Method 8015B: Diesel Range</b>									
Sample ID: MB-16727		MBLK			Batch ID: 16727	Analysis Date:			8/11/2008 3:21:20 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Surr: DNOP	1.048	mg/L	0	105	58	140			
Sample ID: LCS-16727		LCS			Batch ID: 16727	Analysis Date:			8/11/2008 3:56:17 PM
Diesel Range Organics (DRO)	5.997	mg/L	1.0	120	74	157			
Surr: DNOP	0.5053	mg/L	0	101	58	140			
Sample ID: LCSD-16727		LCSD			Batch ID: 16727	Analysis Date:			8/11/2008 4:31:13 PM
Diesel Range Organics (DRO)	5.243	mg/L	1.0	105	74	157	13.4	23	
Surr: DNOP	0.5074	mg/L	0	101	58	140	0	0	
<b>Method: EPA Method 8015B: Gasoline Range</b>									
Sample ID: 0808072-01A MSD		MSD			Batch ID: R29664	Analysis Date:			8/7/2008 6:21:47 PM
Gasoline Range Organics (GRO)	0.5310	mg/L	0.050	100	80	115	0.638	8.39	
Surr: BFB	21.00	mg/L	0	105	79.2	121	0	0	
Sample ID: 5ML RB		MBLK			Batch ID: R29664	Analysis Date:			8/7/2008 11:03:01 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	19.19	mg/L	0	96.0	79.2	121			
Sample ID: LCS GRO 2.5		LCS			Batch ID: R29664	Analysis Date:			8/7/2008 5:21:42 PM
Gasoline Range Organics (GRO)	0.5214	mg/L	0.050	104	80	115			
Surr: BFB	20.63	mg/L	0	103	79.2	121			
Sample ID: 0808072-01A MS		MS			Batch ID: R29664	Analysis Date:			8/7/2008 5:51:43 PM
Gasoline Range Organics (GRO)	0.5344	mg/L	0.050	101	80	115			
Surr: BFB	19.49	mg/L	0	97.5	79.2	121			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

**Client:** Western Refining Southwest, Inc.  
**Project:** San Juan River Semi-Annual Aug 5 2008

**Work Order:** 080807

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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**Method:** EPA Method 8260: Volatiles Short List

**Sample ID:** 5ml rb **MBLK** **Batch ID:** R29757 **Analysis Date:** 8/13/2008 12:36:05 PM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 4-Bromofluorobenzene	9.956	µg/L	0	99.6	80.4	119			

**Sample ID:** b6 **MBLK** **Batch ID:** R29757 **Analysis Date:** 8/14/2008 12:44:10 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 4-Bromofluorobenzene	10.42	µg/L	0	104	80.4	119			

**Sample ID:** 100ng lcs **LCS** **Batch ID:** R29757 **Analysis Date:** 8/13/2008 2:03:00 PM

Benzene	19.87	µg/L	1.0	99.3	86.8	120			
Toluene	18.94	µg/L	1.0	94.7	64.1	127			
Surr: 4-Bromofluorobenzene	10.22	µg/L	0	102	80.4	119			

**Sample ID:** 100ng lcs **LCS** **Batch ID:** R29757 **Analysis Date:** 8/14/2008 1:41:39 AM

Benzene	19.70	µg/L	1.0	98.5	86.8	120			
Toluene	19.35	µg/L	1.0	96.8	64.1	127			
Surr: 4-Bromofluorobenzene	10.39	µg/L	0	104	80.4	119			

**Method:** EPA 120.1: Specific Conductance

**Sample ID:** 0808095-01ADUP **DUP** **Batch ID:** R29685 **Analysis Date:** 8/8/2008

Specific Conductance	998.0	µmhos/cm	0.010				0.200	20	
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**Sample ID:** 0808131-03CDUP **DUP** **Batch ID:** R29685 **Analysis Date:** 8/8/2008

Specific Conductance	2110	µmhos/cm	0.010				0.475	20	
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**Method:** EPA Method 7470: Mercury

**Sample ID:** 0808072-02CMSD **MSD** **Batch ID:** 16832 **Analysis Date:** 8/20/2008 5:58:47 PM

Mercury	0.005205	mg/L	0.00020	103	75	125	0.309	20	
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**Sample ID:** MB-16832 **MBLK** **Batch ID:** 16832 **Analysis Date:** 8/20/2008 5:46:23 PM

Mercury	ND	mg/L	0.00020						
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**Sample ID:** LCS-16832 **LCS** **Batch ID:** 16832 **Analysis Date:** 8/20/2008 5:48:06 PM

Mercury	0.005056	mg/L	0.00020	100	80	120			
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**Sample ID:** 0808072-02CMS **MS** **Batch ID:** 16832 **Analysis Date:** 8/20/2008 5:53:19 PM

Mercury	0.005222	mg/L	0.00020	104	75	125			
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**Qualifiers:**

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Semi-Annual Aug 5 2008

Work Order: 0808072

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 6010B: Dissolved Metals</b>									
<b>Sample ID: MB</b>		MBLK			Batch ID: R29902	Analysis Date: 8/25/2008 8:49:37 AM			
Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.020						
Cadmium	ND	mg/L	0.0020						
Calcium	ND	mg/L	1.0						
Chromium	ND	mg/L	0.0060						
Copper	ND	mg/L	0.0060						
Iron	ND	mg/L	0.020						
Lead	ND	mg/L	0.0050						
Magnesium	ND	mg/L	1.0						
Manganese	ND	mg/L	0.0020						
Potassium	ND	mg/L	1.0						
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						
Zinc	ND	mg/L	0.050						
<b>Sample ID: MB</b>		MBLK			Batch ID: R29935	Analysis Date: 8/26/2008 2:28:11 PM			
Calcium	ND	mg/L	1.0						
Iron	ND	mg/L	0.020						
Lead	ND	mg/L	0.0050						
Magnesium	ND	mg/L	1.0						
Manganese	ND	mg/L	0.0020						
Potassium	ND	mg/L	1.0						
Sodium	ND	mg/L	1.0						
<b>Sample ID: LCS</b>		LCS			Batch ID: R29902	Analysis Date: 8/25/2008 8:54:16 AM			
Arsenic	0.4524	mg/L	0.020	90.5	80	120			
Barium	0.4744	mg/L	0.020	94.9	80	120			
Cadmium	0.4777	mg/L	0.0020	95.5	80	120			
Calcium	51.23	mg/L	1.0	101	80	120			
Chromium	0.5054	mg/L	0.0060	101	80	120			
Copper	0.4777	mg/L	0.0060	95.5	80	120			
Iron	0.5727	mg/L	0.020	115	80	120			
Lead	0.4640	mg/L	0.0050	92.8	80	120			
Magnesium	50.46	mg/L	1.0	99.9	80	120			
Manganese	0.4710	mg/L	0.0020	94.2	80	120			
Potassium	52.48	mg/L	1.0	95.4	80	120			
Selenium	0.4668	mg/L	0.050	93.4	80	120			
Silver	0.4817	mg/L	0.0050	96.3	80	120			
Zinc	0.4789	mg/L	0.050	95.8	80	120			
<b>Sample ID: LCS</b>		LCS			Batch ID: R29935	Analysis Date: 8/26/2008 4:03:19 PM			
Calcium	49.91	mg/L	1.0	98.8	80	120			
Iron	0.5060	mg/L	0.020	101	80	120			
Lead	0.5090	mg/L	0.0050	102	80	120			
Magnesium	49.69	mg/L	1.0	98.4	80	120			
Manganese	0.4983	mg/L	0.0020	99.7	80	120			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Semi-Annual Aug 5 2008

Work Order: 0808072

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 6010B: Dissolved Metals

Sample ID: LCS

LCS

Batch ID: R29935

Analysis Date: 8/26/2008 4:03:19 PM

Potassium	53.30	mg/L	1.0	96.9	80	120			
Sodium	48.92	mg/L	1.0	96.9	80	120			

## Method: EPA 6010B: Total Recoverable Metals

Sample ID: 0808072-04CMSD

MSD

Batch ID: 16766

Analysis Date: 8/15/2008 4:48:49 PM

Arsenic	0.5011	mg/L	0.020	100	75	125	0.673	20	
Barium	0.6557	mg/L	0.010	98.2	75	125	3.14	20	
Cadmium	0.4990	mg/L	0.0020	99.8	75	125	2.03	20	
Chromium	0.4913	mg/L	0.0060	98.3	75	125	1.82	20	
Lead	0.4962	mg/L	0.0050	98.1	75	125	1.55	20	
Selenium	0.5033	mg/L	0.050	101	75	125	4.54	20	
Silver	0.5075	mg/L	0.0050	102	75	125	2.77	20	

Sample ID: MB-16766

MBLK

Batch ID: 16766

Analysis Date: 8/15/2008 4:20:24 PM

Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.010						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						

Sample ID: LCS-16766

LCS

Batch ID: 16766

Analysis Date: 8/15/2008 4:23:28 PM

Arsenic	0.5087	mg/L	0.020	102	80	120			
Barium	0.4837	mg/L	0.010	96.7	80	120			
Cadmium	0.4976	mg/L	0.0020	99.5	80	120			
Chromium	0.4936	mg/L	0.0060	98.7	80	120			
Lead	0.4876	mg/L	0.0050	97.5	80	120			
Selenium	0.5020	mg/L	0.050	100	80	120			
Silver	0.4940	mg/L	0.0050	98.8	80	120			

Sample ID: 0808072-04CMS

MS

Batch ID: 16766

Analysis Date: 8/15/2008 4:45:46 PM

Arsenic	0.4978	mg/L	0.020	99.6	75	125			
Barium	0.6766	mg/L	0.010	102	75	125			
Cadmium	0.5093	mg/L	0.0020	102	75	125			
Chromium	0.5003	mg/L	0.0060	100	75	125			
Lead	0.5039	mg/L	0.0050	99.7	75	125			
Selenium	0.5266	mg/L	0.050	105	75	125			
Silver	0.5218	mg/L	0.0050	104	75	125			

## Method: SM4500-H+B: pH

Sample ID: 0808122-01ADUP

DUP

Batch ID: R29684

Analysis Date: 8/8/2008

pH	9.250	pH units	0.1						
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## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: San Juan River Semi-Annual Aug 5 2008

Work Order: 0808072

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: SM 2540C Total Dissolved Solids</b>									
Sample ID: MB-16698		MBLK							
Total Dissolved Solids	ND	mg/L	20						
Sample ID: MB-16708		MBLK							
Total Dissolved Solids	ND	mg/L	20						
Sample ID: MB-16733		MBLK							
Total Dissolved Solids	ND	mg/L	20						
Sample ID: LCS-16698		LCS							
Total Dissolved Solids	1015	mg/L	20	101	80	120			
Sample ID: LCS-16708		LCS							
Total Dissolved Solids	1014	mg/L	20	101	80	120			
Sample ID: LCS-16733		LCS							
Total Dissolved Solids	1013	mg/L	20	101	80	120			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



**CASE NARRATIVE**

September 4, 2008

Lab Name: Anatek Labs, Inc. 1282 Alturas Drive, Moscow, ID 83843 [www.anateklabs.com](http://www.anateklabs.com) FL NELAP  
E87893, NV ID13-2004-31, WA DOE C126, OR ELAP ID200001, MT 0028, ID, CO, NM

**Project Tracking No.:** 0808072**Anatek Batch:** 080813036

**Project Summary:** Four (4) water samples were received on 8/13/2008 for metals (EPA 6020A) analysis. All samples were received in good condition and with the appropriate chain of custody. Samples were received at 0.8C.

<u>Client Sample ID</u>	<u>Anatek Sample ID</u>	<u>Method/Prep Method</u>
0808072-01F / North of #45	080813036-001	EPA 6020A/3005A
0808072-02F / Upstream	080813036-002	EPA 6020A/3005A
0808072-03F / Downstream	080813036-003	EPA 6020A/3005A
0808072-04F / North #46	080813036-004	EPA 6020A/3005A

**QA/QC Checks**

<u>Parameters</u>	<u>Yes / No</u>	<u>Exceptions / Deviations</u>
Sample Holding Time Valid?	Y	NA
Surrogate Recoveries Valid?	Y	NA
QC Sample(s) Recoveries Valid?	Y	NA
Method Blank(s) Valid?	Y	NA
Tune(s) Valid?	Y	NA
Internal Standard Responses Valid?	Y	NA
Initial Calibration Curve(s) Valid?	Y	NA
Continuing Calibration(s) Valid?	Y	NA
Comments:	Y	NA

**1. Holding Time Requirements**

No problems encountered.

**2. GC/MS Tune Requirements**

NA

**3. Calibration Requirements**

No problems encountered.

**4. Surrogate Recovery Requirements**

NA

**5. QC Sample (LCS/MS/MSD) Recovery Requirements**

No problems encountered.

**6. Method Blank Requirements**

The method blanks were non-detect (&lt;MDL) for all analytes. No problems encountered.

**7. Internal Standard(s) Response Requirements**

No problems encountered.

**8. Comments**

No problems encountered.

**I certify that this data package is in compliance with the terms and conditions of the contract. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee.**

Approved by: \_\_\_\_\_

*John W. Call*

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

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

**Batch #:** 080813036  
**Project Name:** 0808072

## Analytical Results Report

<b>Sample Number</b>	080813036-001	<b>Sampling Date</b>	8/5/2008	<b>Date/Time Received</b>	8/13/2008 10:30 AM
<b>Client Sample ID</b>	0808072-01F / NORTH OF #45	<b>Sampling Time</b>	9:30 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water	<b>Sample Location</b>			

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT: CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA: Cert2632; ID:WA00169; WA: C1287

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ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 080813036  
**Project Name:** 0808072

## Analytical Results Report

<b>Sample Number</b>	080813036-002	<b>Sampling Date</b>	8/5/2008	<b>Date/Time Received</b>	8/13/2008 10:30 AM
<b>Client Sample ID</b>	0808072-02F / UPSTREAM	<b>Sampling Time</b>	10:20 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water	<b>Sample Location</b>			

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	0.00103	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Thursday, September 04, 2008

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

**Batch #:** 080813036  
**Project Name:** 0808072

## Analytical Results Report

<b>Sample Number</b>	080813036-003	<b>Sampling Date</b>	8/5/2008	<b>Date/Time Received</b>	8/13/2008 10:30 AM
<b>Client Sample ID</b>	0808072-03F / DOWNSTREAM	<b>Sampling Time</b>	11:00 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water	<b>Sample Location</b>			

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM:ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

Thursday, September 04, 2008

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

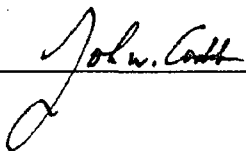
**Batch #:** 080813036  
**Project Name:** 0808072

## Analytical Results Report

<b>Sample Number</b>	080813036-004	<b>Sampling Date</b>	8/5/2008	<b>Date/Time Received</b>	8/13/2008 10:30 AM
<b>Client Sample ID</b>	0808072-04F / NORTH OF #46	<b>Sampling Time</b>	9:45 AM	<b>Extraction Date</b>	8/27/2008
<b>Matrix:</b>	Water	<b>Sample Location</b>			

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	ETL	EPA 6020A	

Authorized Signature



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

### Comments:

Certifications held by Anatek Labs ID: EPA-ID00013; AZ:0701; CO-ID00013; FL(NELAP):E87893; ID-ID00013; IN-C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR-ID200001-002; WA:C1320  
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Thursday, September 04, 2008

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**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 080813036  
**Project Name:** 0808072

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dissolved Uranium	0.0503	mg/L	0.05	100.6	85-115	8/27/2008	8/27/2008

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
080820024-002	Dissolved Uranium	0.00165	0.0552	mg/L	0.05	107.1	75-125	8/27/2008	8/27/2008

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dissolved Uranium	0.0578	mg/L	0.05	112.3	4.6	0-20	8/27/2008	8/27/2008

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Dissolved Uranium	ND	mg/L	0.001	8/27/2008	8/27/2008

AR Acceptable Range  
ND Not Detected  
PQL Practical Quantitation Limit  
RPD Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C1320  
Certifications held by Anatek Labs WA: EPA:WA00169; CA:Cert2632; ID:WA00169; WA:C1287

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## Login Report

Customer Name: HALL ENVIRONMENTAL ANALYSIS LAB

Order ID: 080813036

Purchase Order:

Order Date: 8/13/2008

Project ID:

Project Name: 0808072

Comment:

Sample #: 080813036-001 Customer Sample #: 0808072-01F / NORTH O Site:

Recv'd: ☒ Collector: Date Collected: 8/5/2008  
Quantity: 1 Matrix: Water Date Received: 8/13/2008 10:30:00 A

Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/25/2008	<u>Normal (6-10 Days)</u>

Sample #: 080813036-002 Customer Sample #: 0808072-02F / UPSTREA Site:

Recv'd: ☒ Collector: Date Collected: 8/5/2008  
Quantity: 1 Matrix: Water Date Received: 8/13/2008 10:30:00 A

Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/25/2008	<u>Normal (6-10 Days)</u>

Sample #: 080813036-003 Customer Sample #: 0808072-03F / DOWNST Site:

Recv'd: ☒ Collector: Date Collected: 8/5/2008  
Quantity: 1 Matrix: Water Date Received: 8/13/2008 10:30:00 A

Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/25/2008	<u>Normal (6-10 Days)</u>

Sample #: 080813036-004 Customer Sample #: 0808072-04F / NORTH O Site:

Recv'd: ☒ Collector: Date Collected: 8/5/2008  
Quantity: 1 Matrix: Water Date Received: 8/13/2008 10:30:00 A

Comment:

Test	Test Group	Method	Due Date	Priority
DISSOLVED URANIUM BY 6		EPA 6020A	8/25/2008	<u>Normal (6-10 Days)</u>



**Customer Name:** HALL ENVIRONMENTAL ANALYSIS LAB

**Order ID:** 080813036

**Purchase Order:**

**Order Date:** 8/13/2008

**Project ID:**

**Project Name:** 0808072

**Comment:**

### **SAMPLE CONDITION RECORD**

---

Samples received in a cooler?	Yes
Samples received intact?	Yes
What is the temperature inside the cooler?	.8
Samples received with a COC?	Yes
Samples received within holding time?	Yes
Are all sample bottles properly preserved?	Yes
Are VOC samples free of headspace?	N/A
Is there a trip blank to accompany VOC samples?	N/A
Labels and chain agree?	Yes

# Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins NE, Suite D

Albuquerque, New Mexico 87109-4372

TEL: 5053453975

FAX: 5053454107

**CHAIN-OF-CUSTODY**

080813 036 **RECEIVED** 8/25/2008  
1st SAMP 8/5/2008 1st RCVD 8/13/2008

## Subcontractor:

Anatek Labs, Inc.

1282 Alturas Dr

Moscow, ID 83843

TEL: (208) 883-2839

FAX: (208) 882-9246

Project Name: 0808072

Acct #:

12-Aug-08

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0808072-01F	North of #45	Aqueous	8/5/2008 9:30:00 AM	125HDPHNO3	SEE BELOW
0808072-02F	Upstream	Aqueous	8/5/2008 10:20:00 AM	125HDPHNO3	SEE BELOW
0808072-03F	Downstream	Aqueous	8/5/2008 11:00:00 AM	125HDPHNO3	SEE BELOW
0808072-04F	North of #46	Aqueous	8/5/2008 9:45:00 AM	125HDPHNO3	SEE BELOW

*ALUBS*

## ANALYTICAL COMMENTS:

\*\*\*\*LEVEL 4 QC, DISSOLVED U BY 6020, PLEASE REPORT @ 0.001 mg/L

Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

Relinquished by:

*[Signature]*

Date/Time: 8/12/08 1:58

Relinquished by:

Rect

## ANATEK LABS RECEIVING LIST

☒ RECEIVED INTACT

☒ LABELS & CHAINS AGREE

☒ NO HEADSPACE

☒ PRESERVATIVE

TEMP: 8 °C

NUMBER OF CONTAINERS: 4

SHIPPED VIA: FedEx

DATE & TIME: 8/13/08 6:30

INSPECTED BY: *[Signature]*

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/6/2008

Work Order Number 0808072

Received by: TLS

Checklist completed by:

Signature

8/6/08

Date

Sample ID labels checked by:

TS

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☒

No ☐

N/A ☐

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

Container/Temp Blank temperature?

3°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Added TDS, GRO/DRO; EC to chain for analysis  
as per C.H. AS 8/6

Corrective Action



# Chain-of-Custody Record

Client: Western Refining (Bm, Pld)

Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

☐ Other

☐ EDD (Type) \_\_\_\_\_

Sampler: Andy/Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 3

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
8-5-08	11:00	Down Stream	6-VOA	HCl	0808072
			250ml	HNO3	3
			500ml	HNO3	3
			500ml	H2SO4	3
			500	—	3
8-05-08	945A	North of # 46	6-VOA	HCl	4
			250ml	HNO3	4
			500ml	HNO3	4
			250ml	H2SO4	4
			500ml	—	4

Date: 8-5-08 Time: 3:00

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: Robert Kradon

Received by: Imyca SL

Received by: 934

Remarks:

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

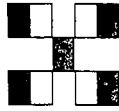
SAN JUAN RIVER

Project #: Semi-Annual, Aug. 5 2008

Project Manager:

## Analysis Request

BTX + MTBE + TMB's (8021)	
BTX + MTBE + TPH (Gas only)	
TPH Method 8015B (Gas/Diesel)	X
TPH (Method 418.1)	
EDB (Method 504.1)	
EDC (Method 8260)	
8310 (PNA or PAH)	
Anions (F, Cl, NO3, NO2, PO4, SO4)	
8081 Pesticides / 8082 PCB's	
8260B (VOA) BTEX, MTBE only	X
8270 (Semi-VOA)	
Dissolved Metals	X
Total Recoverable Metals	
Alkalinity	
TPS, EC	
Air Bubbles (Y or N)	



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Chain-of-Custody Record

Client: Western Refining (Blmfl)

Client: Western Refining (Blmfl)

Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)☐ Other☐ EDD (Type)☒ Standard ☐ Rush

Project Name:

SAU Juan River

Semi-Annual Project #: Aug 5 2008
---

Project #:

Project Manager:

**Sampler:**

On/Off: ☒ Yes ☐ No

Sample Temperature

Date	Time	Sample Request ID
------	------	-------------------

Time

## Sample Request ID

Container

Preservative

HEAL No.

8-5-08

11:00

DownStream Dug

6-V-A

HCL

0808072

5

Date:	Time:
-------	-------

8-5-8 3:00

Relinquished by:

Robert Krohn

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by:

Received by:

8	10	08
---	----	----

Received by:

934

Remarks:

## Analysis Request

BTEX + MTBE + TMB's (8021)  
 BTEX + MTBE + TPH (Gas only)  
 TPH Method 8015B (Gas/Diesel)  
 TPH (Method 418.1)  
 EDB (Method 504.1)  
 EDC (Method 8260)  
 (PNA or PAH)  
 8310 (PNA or PAH)  
 Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)  
 8081 Pesticides / 8082 PCB's  
 8260B (VOA) *137, 181 only*  
 8270 (Semi-VOA)  
 Air Bubbles (Y or N)

Remarks:

COVER LETTER

Tuesday, April 01, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: San Juan River 1st QTR 2008

Order No.: 0803110

Dear Cindy Hurtado:

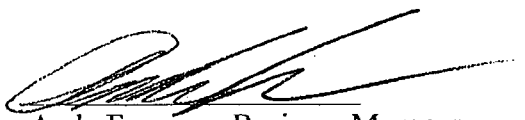
Hall Environmental Analysis Laboratory, Inc. received 5 sample(s) on 3/13/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

  
Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 01-Apr-08

**CLIENT:** San Juan Refining  
**Project:** San Juan River 1st QTR 2008  
**Lab Order:** 0803110

**CASE NARRATIVE**

**Analytical Notes for TDS:**

Samples North of MW46 and North of MW45 were diluted on the first analysis for TDS because of the sample matrix. The results for both of these samples was <400 ppm of TDS. The samples were then reanalyzed, 1.7 days past the 7 day holding time, yielding the following values:

North of MW46 - 240 mg/L  
North of MW45 - 260 mg/L



# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0803110  
Project: San Juan River 1st QTR 2008  
Lab ID: 0803110-01

Client Sample ID: Down Stream  
Collection Date: 3/12/2008 1:30:00 PM  
Date Received: 3/13/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/17/2008 3:32:37 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/17/2008 3:32:37 PM
Surr: DNOP	109	58-140		%REC	1	3/17/2008 3:32:37 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/19/2008 12:19:19 AM
Surr: BFB	106	79.2-121		%REC	1	3/19/2008 12:19:19 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/19/2008 12:19:19 AM
Benzene	ND	1.0		µg/L	1	3/19/2008 12:19:19 AM
Toluene	ND	1.0		µg/L	1	3/19/2008 12:19:19 AM
Ethylbenzene	ND	1.0		µg/L	1	3/19/2008 12:19:19 AM
Xylenes, Total	ND	2.0		µg/L	1	3/19/2008 12:19:19 AM
Surr: 4-Bromofluorobenzene	91.3	68.9-122		%REC	1	3/19/2008 12:19:19 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.21	0.10		mg/L	1	3/13/2008 12:58:34 PM
Chloride	2.8	0.10		mg/L	1	3/13/2008 12:58:34 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	3/13/2008 12:58:34 PM
Bromide	ND	0.10		mg/L	1	3/13/2008 12:58:34 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	3/13/2008 12:58:34 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	3/13/2008 12:58:34 PM
Sulfate	59	0.50		mg/L	1	3/13/2008 12:58:34 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	3/14/2008 5:02:08 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	3/27/2008 4:24:34 PM
Barium	0.081	0.020		mg/L	1	3/27/2008 4:24:34 PM
Cadmium	ND	0.0020		mg/L	1	3/27/2008 4:24:34 PM
Calcium	28	1.0		mg/L	1	3/27/2008 4:24:34 PM
Chromium	ND	0.0060		mg/L	1	3/27/2008 4:24:34 PM
Copper	ND	0.0060		mg/L	1	3/27/2008 4:24:34 PM
Iron	0.33	0.020		mg/L	1	3/27/2008 4:24:34 PM
Lead	ND	0.0050		mg/L	1	3/27/2008 4:24:34 PM
Magnesium	4.5	1.0		mg/L	1	3/27/2008 4:24:34 PM
Manganese	0.035	0.0020		mg/L	1	3/27/2008 4:24:34 PM
Potassium	1.7	1.0		mg/L	1	3/27/2008 4:24:34 PM
Selenium	ND	0.050		mg/L	1	3/27/2008 4:24:34 PM
Silver	ND	0.0050		mg/L	1	3/27/2008 4:24:34 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0803110  
Project: San Juan River 1st QTR 2008  
Lab ID: 0803110-01

Client Sample ID: Down Stream  
Collection Date: 3/12/2008 1:30:00 PM  
Date Received: 3/13/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Sodium	21	1.0		mg/L	1	3/27/2008 4:24:34 PM
Uranium	ND	0.10		mg/L	1	3/27/2008 4:24:34 PM
Zinc	ND	0.050		mg/L	1	3/27/2008 4:24:34 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	3/15/2008 9:58:44 AM
Barium	0.46	0.020		mg/L	1	3/26/2008 3:07:55 PM
Cadmium	ND	0.0020		mg/L	1	3/15/2008 9:58:44 AM
Chromium	ND	0.0060		mg/L	1	3/15/2008 9:58:44 AM
Lead	0.0056	0.0050		mg/L	1	3/15/2008 9:58:44 AM
Selenium	ND	0.050		mg/L	1	3/15/2008 9:58:44 AM
Silver	ND	0.0050		mg/L	1	3/15/2008 9:58:44 AM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	50		µg/L	1	3/17/2008
Acenaphthylene	ND	50		µg/L	1	3/17/2008
Aniline	ND	50		µg/L	1	3/17/2008
Anthracene	ND	50		µg/L	1	3/17/2008
Azobenzene	ND	50		µg/L	1	3/17/2008
Benz(a)anthracene	ND	50		µg/L	1	3/17/2008
Benzo(a)pyrene	ND	50		µg/L	1	3/17/2008
Benzo(b)fluoranthene	ND	50		µg/L	1	3/17/2008
Benzo(g,h,i)perylene	ND	50		µg/L	1	3/17/2008
Benzo(k)fluoranthene	ND	50		µg/L	1	3/17/2008
Benzoic acid	ND	100		µg/L	1	3/17/2008
Benzyl alcohol	ND	50		µg/L	1	3/17/2008
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	3/17/2008
Bis(2-chloroethyl)ether	ND	50		µg/L	1	3/17/2008
Bis(2-chloroisopropyl)ether	ND	50		µg/L	1	3/17/2008
Bis(2-ethylhexyl)phthalate	ND	50		µg/L	1	3/17/2008
4-Bromophenyl phenyl ether	ND	50		µg/L	1	3/17/2008
Butyl benzyl phthalate	ND	50		µg/L	1	3/17/2008
Carbazole	ND	50		µg/L	1	3/17/2008
4-Chloro-3-methylphenol	ND	50		µg/L	1	3/17/2008
4-Chloroaniline	ND	50		µg/L	1	3/17/2008
2-Chloronaphthalene	ND	50		µg/L	1	3/17/2008
2-Chlorophenol	ND	50		µg/L	1	3/17/2008
4-Chlorophenyl phenyl ether	ND	50		µg/L	1	3/17/2008
Chrysene	ND	50		µg/L	1	3/17/2008
Di-n-butyl phthalate	ND	50		µg/L	1	3/17/2008
Di-n-octyl phthalate	ND	50		µg/L	1	3/17/2008
Dibenz(a,h)anthracene	ND	50		µg/L	1	3/17/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining

Client Sample ID: Down Stream

Lab Order: 0803110

Collection Date: 3/12/2008 1:30:00 PM

Project: San Juan River 1st QTR 2008

Date Received: 3/13/2008

Lab ID: 0803110-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Dibenzofuran	ND	50		µg/L	1	3/17/2008
1,2-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
1,3-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
1,4-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
3,3'-Dichlorobenzidine	ND	50		µg/L	1	3/17/2008
Diethyl phthalate	ND	50		µg/L	1	3/17/2008
Dimethyl phthalate	ND	50		µg/L	1	3/17/2008
2,4-Dichlorophenol	ND	50		µg/L	1	3/17/2008
2,4-Dimethylphenol	ND	50		µg/L	1	3/17/2008
4,6-Dinitro-2-methylphenol	ND	50		µg/L	1	3/17/2008
2,4-Dinitrophenol	ND	100		µg/L	1	3/17/2008
2,4-Dinitrotoluene	ND	50		µg/L	1	3/17/2008
2,6-Dinitrotoluene	ND	50		µg/L	1	3/17/2008
Fluoranthene	ND	50		µg/L	1	3/17/2008
Fluorene	ND	50		µg/L	1	3/17/2008
Hexachlorobenzene	ND	50		µg/L	1	3/17/2008
Hexachlorobutadiene	ND	50		µg/L	1	3/17/2008
Hexachlorocyclopentadiene	ND	50		µg/L	1	3/17/2008
Hexachloroethane	ND	50		µg/L	1	3/17/2008
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	3/17/2008
Isophorone	ND	50		µg/L	1	3/17/2008
2-Methylnaphthalene	ND	50		µg/L	1	3/17/2008
2-Methylphenol	ND	50		µg/L	1	3/17/2008
3+4-Methylphenol	ND	50		µg/L	1	3/17/2008
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	3/17/2008
N-Nitrosodimethylamine	ND	50		µg/L	1	3/17/2008
N-Nitrosodiphenylamine	ND	50		µg/L	1	3/17/2008
Naphthalene	ND	50		µg/L	1	3/17/2008
2-Nitroaniline	ND	50		µg/L	1	3/17/2008
3-Nitroaniline	ND	50		µg/L	1	3/17/2008
4-Nitroaniline	ND	50		µg/L	1	3/17/2008
Nitrobenzene	ND	50		µg/L	1	3/17/2008
2-Nitrophenol	ND	50		µg/L	1	3/17/2008
4-Nitrophenol	ND	50		µg/L	1	3/17/2008
Pentachlorophenol	ND	100		µg/L	1	3/17/2008
Phenanthrene	ND	50		µg/L	1	3/17/2008
Phenol	ND	50		µg/L	1	3/17/2008
Pyrene	ND	50		µg/L	1	3/17/2008
Pyridine	ND	50		µg/L	1	3/17/2008
1,2,4-Trichlorobenzene	ND	50		µg/L	1	3/17/2008
2,4,5-Trichlorophenol	ND	50		µg/L	1	3/17/2008
2,4,6-Trichlorophenol	ND	50		µg/L	1	3/17/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 01-Apr-08

**CLIENT:** San Juan Refining**Client Sample ID:** Down Stream**Lab Order:** 0803110**Collection Date:** 3/12/2008 1:30:00 PM**Project:** San Juan River 1st QTR 2008**Date Received:** 3/13/2008**Lab ID:** 0803110-01**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Surr: 2,4,6-Tribromophenol	72.2	16.6-150		%REC	1	3/17/2008
Surr: 2-Fluorobiphenyl	88.7	19.6-134		%REC	1	3/17/2008
Surr: 2-Fluorophenol	61.4	9.54-113		%REC	1	3/17/2008
Surr: 4-Terphenyl-d14	65.3	22.7-145		%REC	1	3/17/2008
Surr: Nitrobenzene-d5	84.0	14.6-134		%REC	1	3/17/2008
Surr: Phenol-d5	55.6	10.7-80.3		%REC	1	3/17/2008
<b>SM 2320B: ALKALINITY</b>						Analyst: BDH
Alkalinity, Total (As CaCO3)	86	20		mg/L CaCO3	1	3/13/2008
Carbonate	ND	2.0		mg/L CaCO3	1	3/13/2008
Bicarbonate	86	20		mg/L CaCO3	1	3/13/2008
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: NSB
Specific Conductance	300	0.010		µmhos/cm	1	3/13/2008
<b>SM4500-H+B: PH</b>						Analyst: BDH
pH	8.01	0.1		pH units	1	3/13/2008
<b>SM 2540C: TDS</b>						Analyst: TAF
Total Dissolved Solids	260	200		mg/L	1	3/17/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 01-Apr-08

CLIENT: San Juan Refining

Client Sample ID: Downstream-FD

Lab Order: 0803110

Collection Date: 3/12/2008 1:35:00 PM

Project: San Juan River 1st QTR 2008

Date Received: 3/13/2008

Lab ID: 0803110-02

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/17/2008 4:07:17 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/17/2008 4:07:17 PM
Surr: DNOP	101	58-140		%REC	1	3/17/2008 4:07:17 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/19/2008 12:49:29 AM
Surr: BFB	107	79.2-121		%REC	1	3/19/2008 12:49:29 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/19/2008 12:49:29 AM
Benzene	ND	1.0		µg/L	1	3/19/2008 12:49:29 AM
Toluene	ND	1.0		µg/L	1	3/19/2008 12:49:29 AM
Ethylbenzene	ND	1.0		µg/L	1	3/19/2008 12:49:29 AM
Xylenes, Total	ND	2.0		µg/L	1	3/19/2008 12:49:29 AM
Surr: 4-Bromofluorobenzene	93.4	68.9-122		%REC	1	3/19/2008 12:49:29 AM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

**CLIENT:** San Juan Refining **Client Sample ID:** Upstream  
**Lab Order:** 0803110 **Collection Date:** 3/12/2008 1:45:00 PM  
**Project:** San Juan River 1st QTR 2008 **Date Received:** 3/13/2008  
**Lab ID:** 0803110-03 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/17/2008 4:41:57 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/17/2008 4:41:57 PM
Surr: DNOP	109	58-140		%REC	1	3/17/2008 4:41:57 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/19/2008 1:19:44 AM
Surr: BFB	109	79.2-121		%REC	1	3/19/2008 1:19:44 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/19/2008 1:19:44 AM
Benzene	ND	1.0		µg/L	1	3/19/2008 1:19:44 AM
Toluene	ND	1.0		µg/L	1	3/19/2008 1:19:44 AM
Ethylbenzene	ND	1.0		µg/L	1	3/19/2008 1:19:44 AM
Xylenes, Total	ND	2.0		µg/L	1	3/19/2008 1:19:44 AM
Surr: 4-Bromofluorobenzene	95.3	68.9-122		%REC	1	3/19/2008 1:19:44 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.20	0.10		mg/L	1	3/13/2008 2:08:13 PM
Chloride	2.8	0.10		mg/L	1	3/13/2008 2:08:13 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	3/13/2008 2:08:13 PM
Bromide	ND	0.10		mg/L	1	3/13/2008 2:08:13 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	3/13/2008 2:08:13 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	3/13/2008 2:08:13 PM
Sulfate	53	0.50		mg/L	1	3/13/2008 2:08:13 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	3/14/2008 5:03:57 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	3/27/2008 4:27:27 PM
Barium	0.085	0.020		mg/L	1	3/27/2008 4:27:27 PM
Cadmium	ND	0.0020		mg/L	1	3/27/2008 4:27:27 PM
Calcium	29	1.0		mg/L	1	3/27/2008 4:27:27 PM
Chromium	0.0070	0.0060		mg/L	1	3/27/2008 4:27:27 PM
Copper	ND	0.0060		mg/L	1	3/27/2008 4:27:27 PM
Iron	0.49	0.020		mg/L	1	3/27/2008 4:27:27 PM
Lead	ND	0.0050		mg/L	1	3/27/2008 4:27:27 PM
Magnesium	4.7	1.0		mg/L	1	3/27/2008 4:27:27 PM
Manganese	0.038	0.0020		mg/L	1	3/27/2008 4:27:27 PM
Potassium	1.8	1.0		mg/L	1	3/27/2008 4:27:27 PM
Selenium	ND	0.050		mg/L	1	3/27/2008 4:27:27 PM
Silver	ND	0.0050		mg/L	1	3/27/2008 4:27:27 PM

**Qualifiers:**  
 \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining

Client Sample ID: Upstream

Lab Order: 0803110

Collection Date: 3/12/2008 1:45:00 PM

Project: San Juan River 1st QTR 2008

Date Received: 3/13/2008

Lab ID: 0803110-03

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Sodium	20	1.0		mg/L	1	3/27/2008 4:27:27 PM
Uranium	ND	0.10		mg/L	1	3/27/2008 4:27:27 PM
Zinc	ND	0.050		mg/L	1	3/27/2008 4:27:27 PM

<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	3/15/2008 10:03:26 AM
Barium	0.39	0.020		mg/L	1	3/26/2008 3:11:01 PM
Cadmium	ND	0.0020		mg/L	1	3/15/2008 10:03:26 AM
Chromium	ND	0.0060		mg/L	1	3/15/2008 10:03:26 AM
Lead	0.0064	0.0050		mg/L	1	3/15/2008 10:03:26 AM
Selenium	ND	0.050		mg/L	1	3/15/2008 10:03:26 AM
Silver	ND	0.0050		mg/L	1	3/15/2008 10:03:26 AM

<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	50		µg/L	1	3/17/2008
Acenaphthylene	ND	50		µg/L	1	3/17/2008
Aniline	ND	50		µg/L	1	3/17/2008
Anthracene	ND	50		µg/L	1	3/17/2008
Azobenzene	ND	50		µg/L	1	3/17/2008
Benz(a)anthracene	ND	50		µg/L	1	3/17/2008
Benzo(a)pyrene	ND	50		µg/L	1	3/17/2008
Benzo(b)fluoranthene	ND	50		µg/L	1	3/17/2008
Benzo(g,h,i)perylene	ND	50		µg/L	1	3/17/2008
Benzo(k)fluoranthene	ND	50		µg/L	1	3/17/2008
Benzoic acid	ND	100		µg/L	1	3/17/2008
Benzyl alcohol	ND	50		µg/L	1	3/17/2008
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	3/17/2008
Bis(2-chloroethyl)ether	ND	50		µg/L	1	3/17/2008
Bis(2-chloroisopropyl)ether	ND	50		µg/L	1	3/17/2008
Bis(2-ethylhexyl)phthalate	ND	50		µg/L	1	3/17/2008
4-Bromophenyl phenyl ether	ND	50		µg/L	1	3/17/2008
Butyl benzyl phthalate	ND	50		µg/L	1	3/17/2008
Carbazole	ND	50		µg/L	1	3/17/2008
4-Chloro-3-methylphenol	ND	50		µg/L	1	3/17/2008
4-Chloroaniline	ND	50		µg/L	1	3/17/2008
2-Chloronaphthalene	ND	50		µg/L	1	3/17/2008
2-Chlorophenol	ND	50		µg/L	1	3/17/2008
4-Chlorophenyl phenyl ether	ND	50		µg/L	1	3/17/2008
Chrysene	ND	50		µg/L	1	3/17/2008
Di-n-butyl phthalate	ND	50		µg/L	1	3/17/2008
Di-n-octyl phthalate	ND	50		µg/L	1	3/17/2008
Dibenz(a,h)anthracene	ND	50		µg/L	1	3/17/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0803110  
Project: San Juan River 1st QTR 2008  
Lab ID: 0803110-03

Client Sample ID: Upstream  
Collection Date: 3/12/2008 1:45:00 PM  
Date Received: 3/13/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Dibenzofuran	ND	50		µg/L	1	3/17/2008
1,2-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
1,3-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
1,4-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
3,3'-Dichlorobenzidine	ND	50		µg/L	1	3/17/2008
Diethyl phthalate	ND	50		µg/L	1	3/17/2008
Dimethyl phthalate	ND	50		µg/L	1	3/17/2008
2,4-Dichlorophenol	ND	50		µg/L	1	3/17/2008
2,4-Dimethylphenol	ND	50		µg/L	1	3/17/2008
4,6-Dinitro-2-methylphenol	ND	50		µg/L	1	3/17/2008
2,4-Dinitrophenol	ND	100		µg/L	1	3/17/2008
2,4-Dinitrotoluene	ND	50		µg/L	1	3/17/2008
2,6-Dinitrotoluene	ND	50		µg/L	1	3/17/2008
Fluoranthene	ND	50		µg/L	1	3/17/2008
Fluorene	ND	50		µg/L	1	3/17/2008
Hexachlorobenzene	ND	50		µg/L	1	3/17/2008
Hexachlorobutadiene	ND	50		µg/L	1	3/17/2008
Hexachlorocyclopentadiene	ND	50		µg/L	1	3/17/2008
Hexachloroethane	ND	50		µg/L	1	3/17/2008
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	3/17/2008
Isophorone	ND	50		µg/L	1	3/17/2008
2-Methylnaphthalene	ND	50		µg/L	1	3/17/2008
2-Methylphenol	ND	50		µg/L	1	3/17/2008
3+4-Methylphenol	ND	50		µg/L	1	3/17/2008
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	3/17/2008
N-Nitrosodimethylamine	ND	50		µg/L	1	3/17/2008
N-Nitrosodiphenylamine	ND	50		µg/L	1	3/17/2008
Naphthalene	ND	50		µg/L	1	3/17/2008
2-Nitroaniline	ND	50		µg/L	1	3/17/2008
3-Nitroaniline	ND	50		µg/L	1	3/17/2008
4-Nitroaniline	ND	50		µg/L	1	3/17/2008
Nitrobenzene	ND	50		µg/L	1	3/17/2008
2-Nitrophenol	ND	50		µg/L	1	3/17/2008
4-Nitrophenol	ND	50		µg/L	1	3/17/2008
Pentachlorophenol	ND	100		µg/L	1	3/17/2008
Phenanthrene	ND	50		µg/L	1	3/17/2008
Phenol	ND	50		µg/L	1	3/17/2008
Pyrene	ND	50		µg/L	1	3/17/2008
Pyridine	ND	50		µg/L	1	3/17/2008
1,2,4-Trichlorobenzene	ND	50		µg/L	1	3/17/2008
2,4,5-Trichlorophenol	ND	50		µg/L	1	3/17/2008
2,4,6-Trichlorophenol	ND	50		µg/L	1	3/17/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit



# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0803110  
Project: San Juan River 1st QTR 2008  
Lab ID: 0803110-03

Client Sample ID: Upstream  
Collection Date: 3/12/2008 1:45:00 PM  
Date Received: 3/13/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Surr: 2,4,6-Tribromophenol	23.4	16.6-150	%REC		1	3/17/2008
Surr: 2-Fluorobiphenyl	71.9	19.6-134	%REC		1	3/17/2008
Surr: 2-Fluorophenol	24.6	9.54-113	%REC		1	3/17/2008
Surr: 4-Terphenyl-d14	51.8	22.7-145	%REC		1	3/17/2008
Surr: Nitrobenzene-d5	72.1	14.6-134	%REC		1	3/17/2008
Surr: Phenol-d5	34.9	10.7-80.3	%REC		1	3/17/2008
<b>SM 2320B: ALKALINITY</b>						Analyst: BDH
Alkalinity, Total (As CaCO3)	84	20	mg/L CaCO3		1	3/13/2008
Carbonate	ND	2.0	mg/L CaCO3		1	3/13/2008
Bicarbonate	84	20	mg/L CaCO3		1	3/13/2008
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: NSB
Specific Conductance	280	0.010	µmhos/cm		1	3/13/2008
<b>SM4500-H+B: PH</b>						Analyst: BDH
pH	8.03	0.1	pH units		1	3/13/2008
<b>SM 2540C: TDS</b>						Analyst: TAF
Total Dissolved Solids	480	400	mg/L		1	3/17/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0803110  
Project: San Juan River 1st QTR 2008  
Lab ID: 0803110-04

Client Sample ID: North of MW46  
Collection Date: 3/12/2008 2:00:00 PM  
Date Received: 3/13/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/17/2008 5:16:39 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/17/2008 5:16:39 PM
Surr: DNOP	99.4	58-140		%REC	1	3/17/2008 5:16:39 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/19/2008 1:49:55 AM
Surr: BFB	111	79.2-121		%REC	1	3/19/2008 1:49:55 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/19/2008 1:49:55 AM
Benzene	ND	1.0		µg/L	1	3/19/2008 1:49:55 AM
Toluene	ND	1.0		µg/L	1	3/19/2008 1:49:55 AM
Ethylbenzene	ND	1.0		µg/L	1	3/19/2008 1:49:55 AM
Xylenes, Total	ND	2.0		µg/L	1	3/19/2008 1:49:55 AM
Surr: 4-Bromofluorobenzene	97.3	68.9-122		%REC	1	3/19/2008 1:49:55 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.19	0.10		mg/L	1	3/13/2008 2:43:02 PM
Chloride	2.7	0.10		mg/L	1	3/13/2008 2:43:02 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	3/13/2008 2:43:02 PM
Bromide	ND	0.10		mg/L	1	3/13/2008 2:43:02 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	3/13/2008 2:43:02 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	3/13/2008 2:43:02 PM
Sulfate	52	0.50		mg/L	1	3/13/2008 2:43:02 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	3/14/2008 5:22:03 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	3/27/2008 4:30:19 PM
Barium	0.086	0.020		mg/L	1	3/27/2008 4:30:19 PM
Cadmium	ND	0.0020		mg/L	1	3/27/2008 4:30:19 PM
Calcium	28	1.0		mg/L	1	3/27/2008 4:30:19 PM
Chromium	0.0068	0.0060		mg/L	1	3/27/2008 4:30:19 PM
Copper	ND	0.0060		mg/L	1	3/27/2008 4:30:19 PM
Iron	0.36	0.020		mg/L	1	3/27/2008 4:30:19 PM
Lead	ND	0.0050		mg/L	1	3/27/2008 4:30:19 PM
Magnesium	4.5	1.0		mg/L	1	3/27/2008 4:30:19 PM
Manganese	0.040	0.0020		mg/L	1	3/27/2008 4:30:19 PM
Potassium	1.7	1.0		mg/L	1	3/27/2008 4:30:19 PM
Selenium	ND	0.050		mg/L	1	3/27/2008 4:30:19 PM
Silver	ND	0.0050		mg/L	1	3/27/2008 4:30:19 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining

Client Sample ID: North of MW46

Lab Order: 0803110

Collection Date: 3/12/2008 2:00:00 PM

Project: San Juan River 1st QTR 2008

Date Received: 3/13/2008

Lab ID: 0803110-04

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Sodium	19	1.0		mg/L	1	3/27/2008 4:30:19 PM
Uranium	ND	0.10		mg/L	1	3/27/2008 4:30:19 PM
Zinc	ND	0.050		mg/L	1	3/27/2008 4:30:19 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	3/15/2008 10:06:27 AM
Barium	0.40	0.020		mg/L	1	3/26/2008 3:14:03 PM
Cadmium	ND	0.0020		mg/L	1	3/15/2008 10:06:27 AM
Chromium	ND	0.0060		mg/L	1	3/15/2008 10:06:27 AM
Lead	0.0051	0.0050		mg/L	1	3/15/2008 10:06:27 AM
Selenium	ND	0.050		mg/L	1	3/15/2008 10:06:27 AM
Silver	ND	0.0050		mg/L	1	3/15/2008 10:06:27 AM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	50		µg/L	1	3/17/2008
Acenaphthylene	ND	50		µg/L	1	3/17/2008
Aniline	ND	50		µg/L	1	3/17/2008
Anthracene	ND	50		µg/L	1	3/17/2008
Azobenzene	ND	50		µg/L	1	3/17/2008
Benz(a)anthracene	ND	50		µg/L	1	3/17/2008
Benzo(a)pyrene	ND	50		µg/L	1	3/17/2008
Benzo(b)fluoranthene	ND	50		µg/L	1	3/17/2008
Benzo(g,h,i)perylene	ND	50		µg/L	1	3/17/2008
Benzo(k)fluoranthene	ND	50		µg/L	1	3/17/2008
Benzoic acid	230	100		µg/L	1	3/17/2008
Benzyl alcohol	ND	50		µg/L	1	3/17/2008
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	3/17/2008
Bis(2-chloroethyl)ether	ND	50		µg/L	1	3/17/2008
Bis(2-chloroisopropyl)ether	ND	50		µg/L	1	3/17/2008
Bis(2-ethylhexyl)phthalate	ND	50		µg/L	1	3/17/2008
4-Bromophenyl phenyl ether	ND	50		µg/L	1	3/17/2008
Butyl benzyl phthalate	ND	50		µg/L	1	3/17/2008
Carbazole	ND	50		µg/L	1	3/17/2008
4-Chloro-3-methylphenol	ND	50		µg/L	1	3/17/2008
4-Chloroaniline	ND	50		µg/L	1	3/17/2008
2-Chloronaphthalene	ND	50		µg/L	1	3/17/2008
2-Chlorophenol	ND	50		µg/L	1	3/17/2008
4-Chlorophenyl phenyl ether	ND	50		µg/L	1	3/17/2008
Chrysene	ND	50		µg/L	1	3/17/2008
Di-n-butyl phthalate	ND	50		µg/L	1	3/17/2008
Di-n-octyl phthalate	ND	50		µg/L	1	3/17/2008
Dibenz(a,h)anthracene	ND	50		µg/L	1	3/17/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining

Client Sample ID: North of MW46

Lab Order: 0803110

Collection Date: 3/12/2008 2:00:00 PM

Project: San Juan River 1st QTR 2008

Date Received: 3/13/2008

Lab ID: 0803110-04

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Dibenzofuran	ND	50		µg/L	1	3/17/2008
1,2-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
1,3-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
1,4-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
3,3'-Dichlorobenzidine	ND	50		µg/L	1	3/17/2008
Diethyl phthalate	ND	50		µg/L	1	3/17/2008
Dimethyl phthalate	ND	50		µg/L	1	3/17/2008
2,4-Dichlorophenol	ND	50		µg/L	1	3/17/2008
2,4-Dimethylphenol	ND	50		µg/L	1	3/17/2008
4,6-Dinitro-2-methylphenol	ND	50		µg/L	1	3/17/2008
2,4-Dinitrophenol	ND	100		µg/L	1	3/17/2008
2,4-Dinitrotoluene	ND	50		µg/L	1	3/17/2008
2,6-Dinitrotoluene	ND	50		µg/L	1	3/17/2008
Fluoranthene	ND	50		µg/L	1	3/17/2008
Fluorene	ND	50		µg/L	1	3/17/2008
Hexachlorobenzene	ND	50		µg/L	1	3/17/2008
Hexachlorobutadiene	ND	50		µg/L	1	3/17/2008
Hexachlorocyclopentadiene	ND	50		µg/L	1	3/17/2008
Hexachloroethane	ND	50		µg/L	1	3/17/2008
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	3/17/2008
Isophorone	ND	50		µg/L	1	3/17/2008
2-Methylnaphthalene	ND	50		µg/L	1	3/17/2008
2-Methylphenol	ND	50		µg/L	1	3/17/2008
3+4-Methylphenol	ND	50		µg/L	1	3/17/2008
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	3/17/2008
N-Nitrosodimethylamine	ND	50		µg/L	1	3/17/2008
N-Nitrosodiphenylamine	ND	50		µg/L	1	3/17/2008
Naphthalene	ND	50		µg/L	1	3/17/2008
2-Nitroaniline	ND	50		µg/L	1	3/17/2008
3-Nitroaniline	ND	50		µg/L	1	3/17/2008
4-Nitroaniline	ND	50		µg/L	1	3/17/2008
Nitrobenzene	ND	50		µg/L	1	3/17/2008
2-Nitrophenol	ND	50		µg/L	1	3/17/2008
4-Nitrophenol	ND	50		µg/L	1	3/17/2008
Pentachlorophenol	ND	100		µg/L	1	3/17/2008
Phenanthrene	ND	50		µg/L	1	3/17/2008
Phenol	ND	50		µg/L	1	3/17/2008
Pyrene	ND	50		µg/L	1	3/17/2008
Pyridine	ND	50		µg/L	1	3/17/2008
1,2,4-Trichlorobenzene	ND	50		µg/L	1	3/17/2008
2,4,5-Trichlorophenol	ND	50		µg/L	1	3/17/2008
2,4,6-Trichlorophenol	ND	50		µg/L	1	3/17/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 01-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0803110  
**Project:** San Juan River 1st QTR 2008  
**Lab ID:** 0803110-04

**Client Sample ID:** North of MW46  
**Collection Date:** 3/12/2008 2:00:00 PM  
**Date Received:** 3/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Surr: 2,4,6-Tribromophenol	5.63	16.6-150	S	%REC	1	3/17/2008
Surr: 2-Fluorobiphenyl	69.0	19.6-134		%REC	1	3/17/2008
Surr: 2-Fluorophenol	11.7	9.54-113		%REC	1	3/17/2008
Surr: 4-Terphenyl-d14	46.8	22.7-145		%REC	1	3/17/2008
Surr: Nitrobenzene-d5	73.4	14.6-134		%REC	1	3/17/2008
Surr: Phenol-d5	31.6	10.7-80.3		%REC	1	3/17/2008
<b>SM 2320B: ALKALINITY</b>						Analyst: BDH
Alkalinity, Total (As CaCO3)	85	20		mg/L CaCO3	1	3/13/2008
Carbonate	ND	2.0		mg/L CaCO3	1	3/13/2008
Bicarbonate	85	20		mg/L CaCO3	1	3/13/2008
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: NSB
Specific Conductance	280	0.010		µmhos/cm	1	3/13/2008
<b>SM4500-H+B: PH</b>						Analyst: BDH
pH	8.07	0.1		pH units	1	3/13/2008
<b>SM 2540C: TDS</b>						Analyst: TAF
Total Dissolved Solids	ND	400		mg/L	1	3/17/2008

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining

Client Sample ID: North of MW45

Lab Order: 0803110

Collection Date: 3/12/2008 2:15:00 PM

Project: San Juan River 1st QTR 2008

Date Received: 3/13/2008

Lab ID: 0803110-05

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/17/2008 5:51:23 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/17/2008 5:51:23 PM
Surr: DNOP	106	58-140		%REC	1	3/17/2008 5:51:23 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/19/2008 2:20:03 AM
Surr: BFB	106	79.2-121		%REC	1	3/19/2008 2:20:03 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	3/19/2008 2:20:03 AM
Benzene	ND	1.0		µg/L	1	3/19/2008 2:20:03 AM
Toluene	ND	1.0		µg/L	1	3/19/2008 2:20:03 AM
Ethylbenzene	ND	1.0		µg/L	1	3/19/2008 2:20:03 AM
Xylenes, Total	ND	2.0		µg/L	1	3/19/2008 2:20:03 AM
Surr: 4-Bromofluorobenzene	91.2	68.9-122		%REC	1	3/19/2008 2:20:03 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.20	0.10		mg/L	1	3/13/2008 3:17:50 PM
Chloride	2.7	0.10		mg/L	1	3/13/2008 3:17:50 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	3/13/2008 3:17:50 PM
Bromide	ND	0.10		mg/L	1	3/13/2008 3:17:50 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	3/13/2008 3:17:50 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	3/13/2008 3:17:50 PM
Sulfate	53	0.50		mg/L	1	3/13/2008 3:17:50 PM
<b>EPA METHOD 7470: MERCURY</b>						Analyst: SNV
Mercury	ND	0.00020		mg/L	1	3/14/2008 5:05:46 PM
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	3/27/2008 4:45:21 PM
Barium	0.080	0.020		mg/L	1	3/27/2008 4:45:21 PM
Cadmium	ND	0.0020		mg/L	1	3/27/2008 4:45:21 PM
Calcium	28	1.0		mg/L	1	3/27/2008 4:45:21 PM
Chromium	ND	0.0060		mg/L	1	3/27/2008 4:45:21 PM
Copper	ND	0.0060		mg/L	1	3/27/2008 4:45:21 PM
Iron	3.8	0.10		mg/L	5	3/28/2008 11:05:34 AM
Lead	ND	0.0050		mg/L	1	3/27/2008 4:45:21 PM
Magnesium	4.9	1.0		mg/L	1	3/27/2008 4:45:21 PM
Manganese	0.037	0.0020		mg/L	1	3/27/2008 4:45:21 PM
Potassium	2.3	1.0		mg/L	1	3/27/2008 4:45:21 PM
Selenium	ND	0.050		mg/L	1	3/27/2008 4:45:21 PM
Silver	ND	0.0050		mg/L	1	3/27/2008 4:45:21 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining Client Sample ID: North of MW45  
 Lab Order: 0803110 Collection Date: 3/12/2008 2:15:00 PM  
 Project: San Juan River 1st QTR 2008 Date Received: 3/13/2008  
 Lab ID: 0803110-05 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 6010B: DISSOLVED METALS</b>						Analyst: TES
Sodium	21	1.0		mg/L	1	3/27/2008 4:45:21 PM
Uranium	ND	0.10		mg/L	1	3/27/2008 4:45:21 PM
Zinc	ND	0.050		mg/L	1	3/27/2008 4:45:21 PM
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>						Analyst: TES
Arsenic	ND	0.020		mg/L	1	3/15/2008 10:09:55 AM
Barium	0.38	0.020		mg/L	1	3/26/2008 3:17:07 PM
Cadmium	ND	0.0020		mg/L	1	3/15/2008 10:09:55 AM
Chromium	ND	0.0060		mg/L	1	3/15/2008 10:09:55 AM
Lead	0.0066	0.0050		mg/L	1	3/15/2008 10:09:55 AM
Selenium	ND	0.050		mg/L	1	3/15/2008 10:09:55 AM
Silver	ND	0.0050		mg/L	1	3/15/2008 10:09:55 AM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	50		µg/L	1	3/17/2008
Acenaphthylene	ND	50		µg/L	1	3/17/2008
Aniline	ND	50		µg/L	1	3/17/2008
Anthracene	ND	50		µg/L	1	3/17/2008
Azobenzene	ND	50		µg/L	1	3/17/2008
Benz(a)anthracene	ND	50		µg/L	1	3/17/2008
Benzo(a)pyrene	ND	50		µg/L	1	3/17/2008
Benzo(b)fluoranthene	ND	50		µg/L	1	3/17/2008
Benzo(g,h,i)perylene	ND	50		µg/L	1	3/17/2008
Benzo(k)fluoranthene	ND	50		µg/L	1	3/17/2008
Benzoic acid	ND	100		µg/L	1	3/17/2008
Benzyl alcohol	ND	50		µg/L	1	3/17/2008
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	3/17/2008
Bis(2-chloroethyl)ether	ND	50		µg/L	1	3/17/2008
Bis(2-chloroisopropyl)ether	ND	50		µg/L	1	3/17/2008
Bis(2-ethylhexyl)phthalate	ND	50		µg/L	1	3/17/2008
4-Bromophenyl phenyl ether	ND	50		µg/L	1	3/17/2008
Butyl benzyl phthalate	ND	50		µg/L	1	3/17/2008
Carbazole	ND	50		µg/L	1	3/17/2008
4-Chloro-3-methylphenol	ND	50		µg/L	1	3/17/2008
4-Chloroaniline	ND	50		µg/L	1	3/17/2008
2-Chloronaphthalene	ND	50		µg/L	1	3/17/2008
2-Chlorophenol	ND	50		µg/L	1	3/17/2008
4-Chlorophenyl phenyl ether	ND	50		µg/L	1	3/17/2008
Chrysene	ND	50		µg/L	1	3/17/2008
Di-n-butyl phthalate	ND	50		µg/L	1	3/17/2008
Di-n-octyl phthalate	ND	50		µg/L	1	3/17/2008
Dibenz(a,h)anthracene	ND	50		µg/L	1	3/17/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level B Analyte detected in the associated Method Blank  
 E Value above quantitation range H Holding times for preparation or analysis exceeded  
 J Analyte detected below quantitation limits MCL Maximum Contaminant Level  
 ND Not Detected at the Reporting Limit RL Reporting Limit  
 S Spike recovery outside accepted recovery limits

## Hall Environmental Analysis Laboratory, Inc.

Date: 01-Apr-08

CLIENT: San Juan Refining

Client Sample ID: North of MW45

Lab Order: 0803110

Collection Date: 3/12/2008 2:15:00 PM

Project: San Juan River 1st QTR 2008

Date Received: 3/13/2008

Lab ID: 0803110-05

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Dibenzofuran	ND	50		µg/L	1	3/17/2008
1,2-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
1,3-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
1,4-Dichlorobenzene	ND	50		µg/L	1	3/17/2008
3,3'-Dichlorobenzidine	ND	50		µg/L	1	3/17/2008
Diethyl phthalate	ND	50		µg/L	1	3/17/2008
Dimethyl phthalate	ND	50		µg/L	1	3/17/2008
2,4-Dichlorophenol	ND	50		µg/L	1	3/17/2008
2,4-Dimethylphenol	ND	50		µg/L	1	3/17/2008
4,6-Dinitro-2-methylphenol	ND	50		µg/L	1	3/17/2008
2,4-Dinitrophenol	ND	100		µg/L	1	3/17/2008
2,4-Dinitrotoluene	ND	50		µg/L	1	3/17/2008
2,6-Dinitrotoluene	ND	50		µg/L	1	3/17/2008
Fluoranthene	ND	50		µg/L	1	3/17/2008
Fluorene	ND	50		µg/L	1	3/17/2008
Hexachlorobenzene	ND	50		µg/L	1	3/17/2008
Hexachlorobutadiene	ND	50		µg/L	1	3/17/2008
Hexachlorocyclopentadiene	ND	50		µg/L	1	3/17/2008
Hexachloroethane	ND	50		µg/L	1	3/17/2008
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	3/17/2008
Isophorone	ND	50		µg/L	1	3/17/2008
2-Methylnaphthalene	ND	50		µg/L	1	3/17/2008
2-Methylphenol	ND	50		µg/L	1	3/17/2008
3+4-Methylphenol	ND	50		µg/L	1	3/17/2008
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	3/17/2008
N-Nitrosodimethylamine	ND	50		µg/L	1	3/17/2008
N-Nitrosodiphenylamine	ND	50		µg/L	1	3/17/2008
Naphthalene	ND	50		µg/L	1	3/17/2008
2-Nitroaniline	ND	50		µg/L	1	3/17/2008
3-Nitroaniline	ND	50		µg/L	1	3/17/2008
4-Nitroaniline	ND	50		µg/L	1	3/17/2008
Nitrobenzene	ND	50		µg/L	1	3/17/2008
2-Nitrophenol	ND	50		µg/L	1	3/17/2008
4-Nitrophenol	ND	50		µg/L	1	3/17/2008
Pentachlorophenol	ND	100		µg/L	1	3/17/2008
Phenanthrene	ND	50		µg/L	1	3/17/2008
Phenol	ND	50		µg/L	1	3/17/2008
Pyrene	ND	50		µg/L	1	3/17/2008
Pyridine	ND	50		µg/L	1	3/17/2008
1,2,4-Trichlorobenzene	ND	50		µg/L	1	3/17/2008
2,4,5-Trichlorophenol	ND	50		µg/L	1	3/17/2008
2,4,6-Trichlorophenol	ND	50		µg/L	1	3/17/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit



**Hall Environmental Analysis Laboratory, Inc.**

Date: 01-Apr-08

CLIENT: San Juan Refining

Client Sample ID: North of MW45

Lab Order: 0803110

Collection Date: 3/12/2008 2:15:00 PM

Project: San Juan River 1st QTR 2008

Date Received: 3/13/2008

Lab ID: 0803110-05

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Surr: 2,4,6-Tribromophenol	59.8	16.6-150		%REC	1	3/17/2008
Surr: 2-Fluorobiphenyl	70.6	19.6-134		%REC	1	3/17/2008
Surr: 2-Fluorophenol	44.2	9.54-113		%REC	1	3/17/2008
Surr: 4-Terphenyl-d14	52.5	22.7-145		%REC	1	3/17/2008
Surr: Nitrobenzene-d5	68.3	14.6-134		%REC	1	3/17/2008
Surr: Phenol-d5	38.8	10.7-80.3		%REC	1	3/17/2008
<b>SM 2320B: ALKALINITY</b>						Analyst: BDH
Alkalinity, Total (As CaCO3)	84	20		mg/L CaCO3	1	3/13/2008
Carbonate	ND	2.0		mg/L CaCO3	1	3/13/2008
Bicarbonate	84	20		mg/L CaCO3	1	3/13/2008
<b>EPA 120.1: SPECIFIC CONDUCTANCE</b>						Analyst: NSB
Specific Conductance	280	0.010		µmhos/cm	1	3/13/2008
<b>SM4500-H+B: PH</b>						Analyst: BDH
pH	8.07	0.1		pH units	1	3/13/2008
<b>SM 2540C: TDS</b>						Analyst: TAF
Total Dissolved Solids	ND	400		mg/L	1	3/17/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: San Juan River 1st QTR 2008

Work Order: 0803110

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions									
Sample ID: MB		MBLK			Batch ID: R27723		Analysis Date: 3/13/2008 10:39:17 AM		
Fluoride	ND	mg/L	0.10	0	0	0			
Chloride	ND	mg/L	0.10	0	0	0			
Nitrogen, Nitrite (As N)	ND	mg/L	0.10	0	0	0			
Bromide	ND	mg/L	0.10	0	0	0			
Nitrogen, Nitrate (As N)	ND	mg/L	0.10	0	0	0			
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50	0	0	0			
Sulfate	ND	mg/L	0.50	0	0	0			
Sample ID: LCS		LCS			Batch ID: R27723		Analysis Date: 3/13/2008 10:56:41 AM		
Fluoride	0.5122	mg/L	0.10	102	90	110			
Chloride	5.243	mg/L	0.10	105	90	110			
Nitrogen, Nitrite (As N)	0.9856	mg/L	0.10	98.6	90	110			
Bromide	2.665	mg/L	0.10	107	90	110			
Nitrogen, Nitrate (As N)	2.633	mg/L	0.10	105	90	110			
Phosphorus, Orthophosphate (As P)	5.273	mg/L	0.50	105	90	110			
Sulfate	10.65	mg/L	0.50	107	90	110			
Method: SM 2320B: Alkalinity									
Sample ID: 0803110-01DMSD		MSD			Batch ID: R27733		Analysis Date: 3/13/2008		
Alkalinity, Total (As CaCO <sub>3</sub> )	166.0	mg/L CaC	20	100	80	120	0.604	20	
Sample ID: MB		MBLK			Batch ID: R27733		Analysis Date: 3/13/2008		
Alkalinity, Total (As CaCO <sub>3</sub> )	ND	mg/L CaC	20						
Carbonate	ND	mg/L CaC	2.0						
Bicarbonate	ND	mg/L CaC	20						
Sample ID: LCS		LCS			Batch ID: R27733		Analysis Date: 3/13/2008		
Alkalinity, Total (As CaCO <sub>3</sub> )	81.00	mg/L CaC	20	100	80	120			
Sample ID: 0803110-01DMS		MS			Batch ID: R27733		Analysis Date: 3/13/2008		
Alkalinity, Total (As CaCO <sub>3</sub> )	165.0	mg/L CaC	20	98.8	80	120			
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-15387		MBLK			Batch ID: 15387		Analysis Date: 3/17/2008 1:48:26 PM		
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-15387		LCS			Batch ID: 15387		Analysis Date: 3/17/2008 2:23:07 PM		
Diesel Range Organics (DRO)	5.118	mg/L	1.0	102	74	157			
Sample ID: LCSD-15387		LCSD			Batch ID: 15387		Analysis Date: 3/17/2008 2:57:56 PM		
Diesel Range Organics (DRO)	5.623	mg/L	1.0	112	74	157	9.39	23	
Method: EPA Method 8015B: Gasoline Range									
Sample ID: 5ML RB		MBLK			Batch ID: R27765		Analysis Date: 3/18/2008 9:00:31 AM		
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Sample ID: 2.5UG GRO LCS		LCS			Batch ID: R27765		Analysis Date: 3/18/2008 8:48:09 PM		
Gasoline Range Organics (GRO)	0.4530	mg/L	0.050	90.6	80	115			

## Qualifiers:

E Value above quantitation range  
J Analyte detected below quantitation limits  
R RPD outside accepted recovery limits  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: San Juan River 1st QTR 2008

Work Order: 0803110

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8021B: Volatiles

Sample ID: 5ML RB

MBLK

Batch ID: R27765 Analysis Date: 3/18/2008 9:00:31 AM

Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						

Sample ID: 100NG BTEX LCS

LCS

Batch ID: R27765 Analysis Date: 3/18/2008 10:48:50 PM

Methyl tert-butyl ether (MTBE)	19.58	µg/L	2.5	97.9	51.2	138			
Benzene	21.01	µg/L	1.0	105	85.9	113			
Toluene	21.55	µg/L	1.0	108	86.4	113			
Ethylbenzene	21.70	µg/L	1.0	108	83.5	118			
Xylenes, Total	64.57	µg/L	2.0	107	83.4	122			

## Modifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: San Juan River 1st QTR 2008

Work Order: 0803110

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-15378

MBLK

Batch ID: 16376 Analysis Date: 3/17/2008

Acenaphthene	ND	µg/L	10
Acenaphthylene	ND	µg/L	10
Aniline	ND	µg/L	10
Anthracene	ND	µg/L	10
Azobenzene	ND	µg/L	10
Benz(a)anthracene	ND	µg/L	10
Benzo(a)pyrene	ND	µg/L	10
Benzo(b)fluoranthene	ND	µg/L	10
Benzo(g,h,i)perylene	ND	µg/L	10
Benzo(k)fluoranthene	ND	µg/L	10
Benzoic acid	ND	µg/L	20
Benzyl alcohol	ND	µg/L	10
Bis(2-chloroethoxy)methane	ND	µg/L	10
Bis(2-chloroethyl)ether	ND	µg/L	10
Bis(2-chloroisopropyl)ether	ND	µg/L	10
Bis(2-ethylhexyl)phthalate	ND	µg/L	10
4-Bromophenyl phenyl ether	ND	µg/L	10
Diethyl benzyl phthalate	ND	µg/L	10
Carbazole	ND	µg/L	10
4-Chloro-3-methylphenol	ND	µg/L	10
4-Chloroaniline	ND	µg/L	10
2-Chloronaphthalene	ND	µg/L	10
2-Chlorophenol	ND	µg/L	10
4-Chlorophenyl phenyl ether	ND	µg/L	10
Chrysene	ND	µg/L	10
Di-n-butyl phthalate	ND	µg/L	10
Di-n-octyl phthalate	ND	µg/L	10
Dibenz(a,h)anthracene	ND	µg/L	10
Dibenzofuran	ND	µg/L	10
1,2-Dichlorobenzene	ND	µg/L	10
1,3-Dichlorobenzene	ND	µg/L	10
1,4-Dichlorobenzene	ND	µg/L	10
3,3'-Dichlorobenzidine	ND	µg/L	10
Diethyl phthalate	ND	µg/L	10
Dimethyl phthalate	ND	µg/L	10
2,4-Dichlorophenol	ND	µg/L	10
2,4-Dimethylphenol	ND	µg/L	10
4,6-Dinitro-2-methylphenol	ND	µg/L	10
2,4-Dinitrophenol	ND	µg/L	20
2,4-Dinitrotoluene	ND	µg/L	10
2,6-Dinitrotoluene	ND	µg/L	10
Fluoranthene	ND	µg/L	10
Fluorene	ND	µg/L	10
1-Chlorobenzene	ND	µg/L	10

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
 Project: San Juan River 1st QTR 2008

Work Order: 0803110

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-15376 MBLK Batch ID: 15376 Analysis Date: 3/17/2008

Hexachlorobutadiene	ND	µg/L	10
Hexachlorocyclopentadiene	ND	µg/L	10
Hexachloroethane	ND	µg/L	10
Indeno(1,2,3-cd)pyrene	ND	µg/L	10
Isophorone	ND	µg/L	10
2-Methylnaphthalene	ND	µg/L	10
2-Methylphenol	ND	µg/L	10
3+4-Methylphenol	ND	µg/L	10
N-Nitrosodi-n-propylamine	ND	µg/L	10
N-Nitrosodimethylamine	ND	µg/L	10
N-Nitrosodiphenylamine	ND	µg/L	10
Naphthalene	ND	µg/L	10
2-Nitroaniline	ND	µg/L	10
3-Nitroaniline	ND	µg/L	10
4-Nitroaniline	ND	µg/L	10
Nitrobenzene	ND	µg/L	10
2-Nitrophenol	ND	µg/L	10
4-Nitrophenol	ND	µg/L	10
Pentachlorophenol	ND	µg/L	20
Phenanthrene	ND	µg/L	10
Phenol	ND	µg/L	10
Pyrene	ND	µg/L	10
Pyridine	ND	µg/L	10
1,2,4-Trichlorobenzene	ND	µg/L	10
2,4,5-Trichlorophenol	ND	µg/L	10
2,4,6-Trichlorophenol	ND	µg/L	10

Sample ID: lcs-15376 LCS Batch ID: 15376 Analysis Date: 3/17/2008

Acenaphthene	58.40	µg/L	10	58.4	11	123
4-Chloro-3-methylphenol	125.1	µg/L	10	62.6	15.4	119
2-Chlorophenol	108.7	µg/L	10	54.3	12.2	122
1,4-Dichlorobenzene	50.28	µg/L	10	50.3	16.9	100
2,4-Dinitrotoluene	63.36	µg/L	10	63.4	13	138
N-Nitrosodi-n-propylamine	62.58	µg/L	10	62.6	9.93	122
4-Nitrophenol	57.14	µg/L	10	28.6	12.5	87.4
Pentachlorophenol	83.84	µg/L	20	41.9	3.55	114
Phenol	65.40	µg/L	10	32.7	7.53	73.1
Pyrene	52.42	µg/L	10	52.4	12.6	140
1,2,4-Trichlorobenzene	54.58	µg/L	10	54.6	17.4	98.7

Sample ID: lcsd-15376 LCSD Batch ID: 15376 Analysis Date: 3/17/2008

Acenaphthene	61.48	µg/L	10	61.5	11	123	5.14	30.5
4-Chloro-3-methylphenol	136.4	µg/L	10	68.2	15.4	119	8.66	28.6
2-Chlorophenol	114.8	µg/L	10	57.4	12.2	122	5.48	107
1,4-Dichlorobenzene	55.56	µg/L	10	55.6	16.9	100	9.98	62.1
2,4-Dinitrotoluene	65.70	µg/L	10	65.7	13	138	3.63	14.7

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: San Juan River 1st QTR 2008

Work Order: 0803110

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8270C: Semivolatiles

Sample ID: Icsd-15376			LCSD			Batch ID: 15376		Analysis Date: 3/17/2008	
N-Nitrosodi-n-propylamine	68.10	µg/L	10	68.1	9.93	122	8.45	30.3	
4-Nitrophenol	51.70	µg/L	10	25.9	12.5	87.4	10.0	36.3	
Pentachlorophenol	82.60	µg/L	20	41.3	3.55	114	1.49	49	
Phenol	68.52	µg/L	10	34.3	7.53	73.1	4.66	52.4	
Pyrene	56.36	µg/L	10	56.4	12.6	140	7.24	16.3	
1,2,4-Trichlorobenzene	62.18	µg/L	10	62.2	17.4	98.7	13.0	36.4	

## Method: EPA Method 7470: Mercury

Sample ID: MB-15374	MBLK				Batch ID: 15374	Analysis Date: 3/14/2008 4:58:33 PM
Mercury	ND	mg/L	0.00020			
Sample ID: LCS-15374	LCS				Batch ID: 15374	Analysis Date: 3/14/2008 5:00:21 PM
Mercury	0.005085	mg/L	0.00020	99.8	80	120

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
 Project: San Juan River 1st QTR 2008

Work Order: 0803110

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 6010B: Dissolved Metals

Sample ID: MB

MBLK

Batch ID: R27894 Analysis Date: 3/27/2008 4:02:59 PM

Arsenic	ND	mg/L	0.020
Barium	ND	mg/L	0.020
Cadmium	ND	mg/L	0.0020
Calcium	ND	mg/L	1.0
Chromium	ND	mg/L	0.0060
Copper	ND	mg/L	0.0060
Iron	ND	mg/L	0.020
Lead	ND	mg/L	0.0050
Magnesium	ND	mg/L	1.0
Manganese	ND	mg/L	0.0020
Potassium	ND	mg/L	1.0
Selenium	ND	mg/L	0.050
Silver	ND	mg/L	0.0050
Sodium	ND	mg/L	1.0
Uranium	ND	mg/L	0.10
Zinc	ND	mg/L	0.050

Sample ID: MB

MBLK

Batch ID: R27900 Analysis Date: 3/28/2008 10:40:04 AM

Calcium	ND	mg/L	1.0
Iron	ND	mg/L	0.020
Lead	ND	mg/L	0.0050
Magnesium	ND	mg/L	1.0
Manganese	ND	mg/L	0.0020
Potassium	ND	mg/L	1.0
Selenium	ND	mg/L	0.050
Sodium	ND	mg/L	1.0

Sample ID: LCS

LCS

Batch ID: R27894 Analysis Date: 3/27/2008 4:05:51 PM

Arsenic	0.5096	mg/L	0.020	102	80	120
Barium	0.4916	mg/L	0.020	98.3	80	120
Cadmium	0.5190	mg/L	0.0020	104	80	120
Calcium	51.09	mg/L	1.0	101	80	120
Chromium	0.5013	mg/L	0.0060	100	80	120
Copper	0.4941	mg/L	0.0060	98.8	80	120
Iron	0.4902	mg/L	0.020	98.0	80	120
Lead	0.5070	mg/L	0.0050	101	80	120
Magnesium	52.13	mg/L	1.0	103	80	120
Manganese	0.4883	mg/L	0.0020	97.7	80	120
Potassium	55.28	mg/L	1.0	101	80	120
Selenium	0.5142	mg/L	0.050	103	80	120
Silver	0.5051	mg/L	0.0050	101	80	120
Sodium	55.72	mg/L	1.0	110	80	120
Uranium	0.4455	mg/L	0.10	89.1	80	120
Zinc	0.5041	mg/L	0.050	101	80	120

Sample ID: LCS

LCS

Batch ID: R27900 Analysis Date: 3/28/2008 10:42:57 AM

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: San Juan River 1st QTR 2008

Work Order: 0803110

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 6010B: Dissolved Metals

Sample ID: LCS LCS Batch ID: R27900 Analysis Date: 3/28/2008 10:42:57 AM

Calcium	50.31	mg/L	1.0	99.6	80	120			
Iron	0.5069	mg/L	0.020	101	80	120			
Lead	0.4969	mg/L	0.0050	99.4	80	120			
Magnesium	50.51	mg/L	1.0	100	80	120			
Manganese	0.4958	mg/L	0.0020	99.2	80	120			
Potassium	53.46	mg/L	1.0	97.2	80	120			
Selenium	0.4926	mg/L	0.050	98.5	80	120			
Sodium	52.84	mg/L	1.0	105	80	120			

Method: EPA 6010B: Total Recoverable Metals

Sample ID: MB-15367 MBLK Batch ID: 15367 Analysis Date: 3/15/2008 9:39:42 AM

Arsenic	ND	mg/L	0.020						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						

Sample ID: MB-15403

Batch ID: 15403 Analysis Date: 3/26/2008 3:01:26 PM

Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.010						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Selenium	ND	mg/L	0.050						
Silver	ND	mg/L	0.0050						

Sample ID: LCS-15367

Batch ID: 15367 Analysis Date: 3/15/2008 9:42:54 AM

Arsenic	0.4752	mg/L	0.020	95.0	80	120			
Cadmium	0.4868	mg/L	0.0020	97.4	80	120			
Chromium	0.4863	mg/L	0.0060	97.3	80	120			
Lead	0.4691	mg/L	0.0050	93.8	80	120			
Selenium	0.4660	mg/L	0.050	93.2	80	120			
Silver	0.4862	mg/L	0.0050	97.0	80	120			

Sample ID: LCS-15403

Batch ID: 15403 Analysis Date: 3/26/2008 3:04:41 PM

Arsenic	0.4651	mg/L	0.020	93.0	80	120			
Barium	0.4634	mg/L	0.010	92.7	80	120			
Cadmium	0.4709	mg/L	0.0020	94.2	80	120			
Chromium	0.4689	mg/L	0.0060	93.8	80	120			
Lead	0.4594	mg/L	0.0050	91.9	80	120			
Selenium	0.4714	mg/L	0.050	94.3	80	120			
Silver	0.4791	mg/L	0.0050	95.8	80	120			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: San Juan River 1st QTR 2008

Work Order: 0803110

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

Method: SM 2540C: TDS

Sample ID: MB-15384 MBLK Batch ID: 15384 Analysis Date: 3/17/2008

Total Dissolved Solids ND mg/L 20

Sample ID: MB-15436 MBLK Batch ID: 15436 Analysis Date: 3/21/2008

Total Dissolved Solids ND mg/L 20

Sample ID: LCS-15384 LCS Batch ID: 15384 Analysis Date: 3/17/2008

Total Dissolved Solids 1020 mg/L 20 102 80 120

Sample ID: LCS-15436 LCS Batch ID: 15436 Analysis Date: 3/21/2008

Total Dissolved Solids 1018 mg/L 20 101 80 120

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

3/13/2008

Work Order Number 0803110

Received by: ARS

Checklist completed by:

Signature

*James Shomin*

3/13/08

Date

Sample ID labels checked by:

Initials

*AK*

Matrix:

Carrier name Greyhound

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

Container/Temp Blank temperature?

6°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted: \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted: \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action: \_\_\_\_\_





# Chain of Custody Record

Client: SAN JUAN REFINING  
Western Refining  
 Address: #50 CR 4990  
Bloomfield, NM  
 Phone #: 505-632-4161  
 email or Fax#: 505-632-3911  
 QA/QC Package:  
☐ Standard ☐ Level 4 (Full Validation)  
☐ Other \_\_\_\_\_  
☐ EDD (Type) \_\_\_\_\_

Turn-Around Time:

☐ Standard ☐ Rush

Project Name:

SAN JUAN RIVER 2008  
1st QTR

Project #:

Project Manager:

Sampler: Cindy + Bob

Chain of Custody No. \_\_\_\_\_

Sample Preparation \_\_\_\_\_

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
3-12-08	2:00	North of Hwy 46	6-VOA	HCl	0803110
			1-500	HNO <sub>3</sub>	4
			1-250	HNO <sub>3</sub> Standard	4
			1-500	H <sub>2</sub> SO <sub>4</sub>	4
			1-500	—	4
			1-liter	Amber	4

Date: 3/12/08 Time: 3pm  
 Relinquished by: Cindy Hurtado  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_

Received by: [Signature] 8:25 3/13/08  
 Received by: \_\_\_\_\_

Remarks:

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

### Analysis Request

BTX + MTBE + TMS (8021)	<input checked="" type="checkbox"/>
BTX + MTBE + TPH (Gas only)	<input checked="" type="checkbox"/>
TPH Method 8015B (Gas/Diesel)	<input checked="" type="checkbox"/>
TPH (Method 418.1)	
EDB (Method 504.1)	
EDC (Method 8260)	
8310 (PNA or PAH)	
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	
8081 Pesticides / 8082 PCBs	
8260B (VOA)	
8270 (Semi-VOA)	
RCRA 8 Metals	<input checked="" type="checkbox"/>
Dissolved WQC Metals	<input checked="" type="checkbox"/>
BACK UP	<input checked="" type="checkbox"/>
General Chemistry	<input checked="" type="checkbox"/>
Air Bubbles (Y or N)	



## COVER LETTER

Tuesday, December 09, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: Tank #33 Dec 2, 08

Order No.: 0812052

Dear Cindy Hurtado:

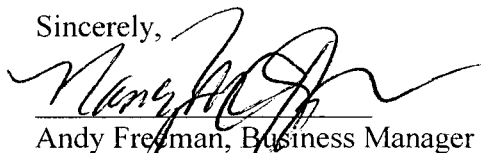
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 12/3/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 09-Dec-08

**CLIENT:** Western Refining Southwest, Inc.**Project:** Tank #33 Dec 2, 08**Lab Order:** 0812052**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0812052-01A	TK #33	R31483	EPA Method 8260: Volatiles Short List	12/2/2008 9:00:00 AM
0812052-01A	TK #33	R31483	EPA Method 8260B: VOLATILES	12/2/2008 9:00:00 AM



**Hall Environmental Analysis Laboratory, Inc.**

Date: 09-Dec-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0812052  
**Project:** Tank #33 Dec 2, 08  
**Lab ID:** 0812052-01

**Client Sample ID:** TK #33  
**Collection Date:** 12/2/2008 9:00:00 AM  
**Date Received:** 12/3/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	1.7	1.0		µg/L	1	12/4/2008 4:23:50 PM
Toluene	ND	1.0		µg/L	1	12/4/2008 4:23:50 PM
Ethylbenzene	ND	1.0		µg/L	1	12/4/2008 4:23:50 PM
Methyl tert-butyl ether (MTBE)	2.6	1.0		µg/L	1	12/4/2008 4:23:50 PM
Xylenes, Total	ND	2.0		µg/L	1	12/4/2008 4:23:50 PM
Surr: 1,2-Dichloroethane-d4	78.6	59.3-133		%REC	1	12/4/2008 4:23:50 PM
Surr: 4-Bromofluorobenzene	87.4	80.4-119		%REC	1	12/4/2008 4:23:50 PM
Surr: Dibromofluoromethane	80.8	59.5-134		%REC	1	12/4/2008 4:23:50 PM
Surr: Toluene-d8	84.7	53.5-136		%REC	1	12/4/2008 4:23:50 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Tank #33 Dec 2, 08

Work Order: 0812052

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R31483 Analysis Date: 12/4/2008 10:27:19 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	2.0

Sample ID: 100ng lcs

LCS

Batch ID: R31483 Analysis Date: 12/4/2008 12:28:59 PM

Benzene	18.65	µg/L	1.0	93.3	86.8	120
Toluene	17.26	µg/L	1.0	86.3	64.1	127

## Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

12/3/2008

Work Order Number 0812052

Received by: TLS

Checklist completed by:

Signature

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Not Shipped <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	

Container/Temp Blank temperature?

4°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_



COVER LETTER

Thursday, November 06, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: TK #33 Nov 4, 2008

Order No.: 0811041

Dear Cindy Hurtado:

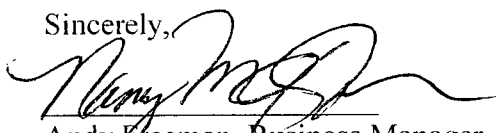
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 11/5/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

  
Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 06-Nov-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33 Nov 4, 2008  
**Lab Order:** 0811041

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0811041-01A	TK #33	R31026	EPA Method 8260: Volatiles Short List	11/4/2008 8:55:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 06-Nov-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0811041  
**Project:** TK #33 Nov 4, 2008  
**Lab ID:** 0811041-01

**Client Sample ID:** TK #33  
**Collection Date:** 11/4/2008 8:55:00 AM  
**Date Received:** 11/5/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	1.5	1.0		µg/L	1	11/5/2008 2:18:06 PM
Toluene	ND	1.0		µg/L	1	11/5/2008 2:18:06 PM
Ethylbenzene	ND	1.0		µg/L	1	11/5/2008 2:18:06 PM
Methyl tert-butyl ether (MTBE)	2.4	1.0		µg/L	1	11/5/2008 2:18:06 PM
Xylenes, Total	ND	2.0		µg/L	1	11/5/2008 2:18:06 PM
Surr: 1,2-Dichloroethane-d4	85.7	59.3-133		%REC	1	11/5/2008 2:18:06 PM
Surr: 4-Bromofluorobenzene	91.4	80.4-119		%REC	1	11/5/2008 2:18:06 PM
Surr: Dibromofluoromethane	85.6	59.5-134		%REC	1	11/5/2008 2:18:06 PM
Surr: Toluene-d8	86.4	53.5-136		%REC	1	11/5/2008 2:18:06 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: TK #33 Nov 4, 2008

Work Order: 0811041

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

## Method: EPA Method 8260: Volatiles Short List

Sample ID: 0811041-01a MSD

MSD

Batch ID: R31026

Analysis Date: 11/5/2008 3:15:42 PM

Benzene	21.73	µg/L	1.0	101	72.4	126	0.214	20	
Toluene	17.68	µg/L	1.0	88.4	79.2	115	6.70	20	
Surr: 1,2-Dichloroethane-d4	8.899	µg/L	0	89.0	59.3	133	0	0	
Surr: 4-Bromofluorobenzene	9.843	µg/L	0	98.4	80.4	119	0	0	
Surr: Dibromofluoromethane	9.114	µg/L	0	91.1	59.5	134	0	0	
Surr: Toluene-d8	8.051	µg/L	0	80.5	53.5	136	0	0	

Sample ID: 5ml rb

MBLK

Batch ID: R31026

Analysis Date: 11/5/2008 10:06:14 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	8.744	µg/L	0	87.4	59.3	133			
Surr: 4-Bromofluorobenzene	9.684	µg/L	0	96.8	80.4	119			
Surr: Dibromofluoromethane	9.015	µg/L	0	90.2	59.5	134			
Surr: Toluene-d8	8.930	µg/L	0	89.3	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R31026

Analysis Date: 11/5/2008 11:53:03 AM

Benzene	20.65	µg/L	1.0	103	86.8	120			
Toluene	18.46	µg/L	1.0	92.3	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.032	µg/L	0	90.3	59.3	133			
Surr: 4-Bromofluorobenzene	10.17	µg/L	0	102	80.4	119			
Surr: Dibromofluoromethane	9.245	µg/L	0	92.5	59.5	134			
Surr: Toluene-d8	8.591	µg/L	0	85.9	53.5	136			

Sample ID: 0811041-01a MS

MS

Batch ID: R31026

Analysis Date: 11/5/2008 2:46:54 PM

Benzene	21.77	µg/L	1.0	101	72.4	126			
Toluene	18.91	µg/L	1.0	94.5	79.2	115			
Surr: 1,2-Dichloroethane-d4	8.618	µg/L	0	86.2	59.3	133			
Surr: 4-Bromofluorobenzene	9.208	µg/L	0	92.1	80.4	119			
Surr: Dibromofluoromethane	8.931	µg/L	0	89.3	59.5	134			
Surr: Toluene-d8	8.527	µg/L	0	85.3	53.5	136			

## Qualifiers:

E Estimated value  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits



# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name: WESTERN REFINING SOUT

Date Received:

11/5/2008

Work Order Number 0811041

Received by: ARS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

4°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action



COVER LETTER

Monday, November 03, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: TK #33 10/27/08

Order No.: 0810585

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 10/29/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager

Nancy McDuffie, Laboratory Manager

NM Lab # NM9425

AZ license # AZ0682

ORELAP Lab # NM100001

Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 03-Nov-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33 10/27/08  
**Lab Order:** 0810585

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0810585-01A	TK #33	R30936	EPA Method 8260: Volatiles Short List	10/27/2008 8:40:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 03-Nov-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0810585  
**Project:** TK #33 10/27/08  
**Lab ID:** 0810585-01

**Client Sample ID:** TK #33  
**Collection Date:** 10/27/2008 8:40:00 AM  
**Date Received:** 10/29/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	2.3	1.0		µg/L	1	10/29/2008 5:41:17 PM
Toluene	ND	1.0		µg/L	1	10/29/2008 5:41:17 PM
Ethylbenzene	ND	1.0		µg/L	1	10/29/2008 5:41:17 PM
Methyl tert-butyl ether (MTBE)	2.4	1.0		µg/L	1	10/29/2008 5:41:17 PM
Xylenes, Total	ND	2.0		µg/L	1	10/29/2008 5:41:17 PM
Surr: 1,2-Dichloroethane-d4	96.6	59.3-133		%REC	1	10/29/2008 5:41:17 PM
Surr: 4-Bromofluorobenzene	95.7	80.4-119		%REC	1	10/29/2008 5:41:17 PM
Surr: Dibromofluoromethane	98.8	59.5-134		%REC	1	10/29/2008 5:41:17 PM
Surr: Toluene-d8	102	53.5-136		%REC	1	10/29/2008 5:41:17 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: TK #33 10/27/08

Work Order: 0810585

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb MBLK

Batch ID: R30936 Analysis Date: 10/29/2008 10:34:01 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	10.35	µg/L	0	104	59.3	133			
Surr: 4-Bromofluorobenzene	9.144	µg/L	0	91.4	80.4	119			
Surr: Dibromofluoromethane	9.840	µg/L	0	98.4	59.5	134			
Surr: Toluene-d8	10.36	µg/L	0	104	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R30936 Analysis Date: 10/29/2008 11:31:48 AM

Benzene	23.44	µg/L	1.0	117	86.8	120			
Toluene	19.95	µg/L	1.0	99.8	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.736	µg/L	0	97.4	59.3	133			
Surr: 4-Bromofluorobenzene	9.828	µg/L	0	98.3	80.4	119			
Surr: Dibromofluoromethane	10.11	µg/L	0	101	59.5	134			
Surr: Toluene-d8	10.20	µg/L	0	102	53.5	136			

## Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

10/29/2008

Work Order Number 0810585

Received by: ARS

Checklist completed by:

Signature

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Container/Temp Blank temperature?

4°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

☒ Standard ☐ Rush

Project Name:

TK #33 10-27-08

Project #:

Project Manager:

Sampler: Bob

On Ice: ☒ Yes ☐ No

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Container

Preservative  
Type

# HEAL NO.

08/0585

3-Vol	Hc1
-------	-----

33-3861-1

10-27-28	8:40
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## Sample Request ID

## Matrix

Date \_\_\_\_\_

QA/QC Package:

☐ Standard

☐ Other☐ EDD (Type)☒ Level 4 (Full Validation)

☐ Standard

☐ Other☐ EDD (Type)

Relinquished by:

Date: \_\_\_\_\_

10-28-09 1:30



Received by: 	Date	Time
--	------	------

Date, Time

Received by:

Date \_\_\_\_\_ Time \_\_\_\_\_

Remarks:

if needed, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any subcontracted data will be clearly notated on the analytical report.



COVER LETTER

Monday, October 27, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: TK #33 Oct 2008

Order No.: 0810501

Dear Cindy Hurtado:

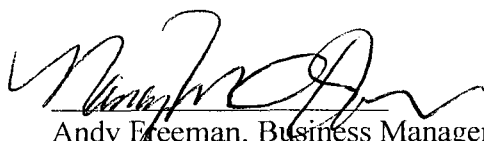
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 10/24/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 27-Oct-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33 Oct 2008  
**Lab Order:** 0810501

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0810501-01A	TK #33	R30865	EPA Method 8260: Volatiles Short List	10/22/2008 9:35:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 27-Oct-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0810501  
**Project:** TK #33 Oct 2008  
**Lab ID:** 0810501-01

**Client Sample ID:** TK #33  
**Collection Date:** 10/22/2008 9:35:00 AM  
**Date Received:** 10/24/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	2.2	1.0		µg/L	1	10/25/2008 3:14:16 AM
Toluene	ND	1.0		µg/L	1	10/25/2008 3:14:16 AM
Ethylbenzene	ND	1.0		µg/L	1	10/25/2008 3:14:16 AM
Methyl tert-butyl ether (MTBE)	2.2	1.0		µg/L	1	10/25/2008 3:14:16 AM
Xylenes, Total	ND	2.0		µg/L	1	10/25/2008 3:14:16 AM
Surr: 1,2-Dichloroethane-d4	88.6	59.3-133		%REC	1	10/25/2008 3:14:16 AM
Surr: 4-Bromofluorobenzene	105	80.4-119		%REC	1	10/25/2008 3:14:16 AM
Surr: Dibromofluoromethane	93.0	59.5-134		%REC	1	10/25/2008 3:14:16 AM
Surr: Toluene-d8	96.7	53.5-136		%REC	1	10/25/2008 3:14:16 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: TK #33 Oct 2008

Work Order: 0810501

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260: Volatiles Short List

Sample ID: b7

MBLK

Batch ID: R30865 Analysis Date: 10/24/2008 10:28:55 PM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	8.903	µg/L	0	89.0	59.3	133			
Surr: 4-Bromofluorobenzene	9.203	µg/L	0	92.0	80.4	119			
Surr: Dibromofluoromethane	8.289	µg/L	0	82.9	59.5	134			
Surr: Toluene-d8	10.38	µg/L	0	104	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R30865 Analysis Date: 10/24/2008 11:26:06 PM

Benzene	23.24	µg/L	1.0	116	86.8	120			
Toluene	21.49	µg/L	1.0	107	64.1	127			
Surr: 1,2-Dichloroethane-d4	8.989	µg/L	0	89.9	59.3	133			
Surr: 4-Bromofluorobenzene	9.815	µg/L	0	98.2	80.4	119			
Surr: Dibromofluoromethane	9.585	µg/L	0	95.9	59.5	134			
Surr: Toluene-d8	9.344	µg/L	0	93.4	53.5	136			

## Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

10/24/2008

Work Order Number 0810501

Received by: TLS

Sample ID labels checked by:

Checklist completed by:

Signature

Date

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

4°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action



COVER LETTER

Thursday, October 23, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: TK #33 10/15/08

Order No.: 0810328

Dear Cindy Hurtado:

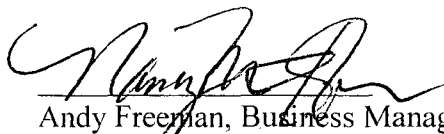
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 10/16/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 23-Oct-08

**CLIENT:** Western Refining Southwest, Inc.**Project:** TK #33 10/15/08**Lab Order:** 0810328**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0810328-01A	TK #33	R30747	EPA Method 8260: Volatiles Short List	10/15/2008 8:40:00 AM



**Hall Environmental Analysis Laboratory, Inc.**

Date: 23-Oct-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0810328  
**Project:** TK #33 10/15/08  
**Lab ID:** 0810328-01

**Client Sample ID:** TK #33  
**Collection Date:** 10/15/2008 8:40:00 AM  
**Date Received:** 10/16/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	2.2	1.0		µg/L	1	10/17/2008 7:33:39 PM
Toluene	ND	1.0		µg/L	1	10/17/2008 7:33:39 PM
Ethylbenzene	ND	1.0		µg/L	1	10/17/2008 7:33:39 PM
Methyl tert-butyl ether (MTBE)	1.6	1.0		µg/L	1	10/17/2008 7:33:39 PM
Xylenes, Total	ND	2.0		µg/L	1	10/17/2008 7:33:39 PM
Surr: 1,2-Dichloroethane-d4	95.3	59.3-133		%REC	1	10/17/2008 7:33:39 PM
Surr: 4-Bromofluorobenzene	101	80.4-119		%REC	1	10/17/2008 7:33:39 PM
Surr: Dibromofluoromethane	96.9	59.5-134		%REC	1	10/17/2008 7:33:39 PM
Surr: Toluene-d8	109	53.5-136		%REC	1	10/17/2008 7:33:39 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Estimated value  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: TK #33 10/15/08

Work Order: 0810328

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R30747 Analysis Date: 10/17/2008 1:56:17 PM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.658	µg/L	0	96.6	59.3	133			
Surr: 4-Bromofluorobenzene	9.802	µg/L	0	98.0	80.4	119			
Surr: Dibromofluoromethane	9.726	µg/L	0	97.3	59.5	134			
Surr: Toluene-d8	10.82	µg/L	0	108	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R30747 Analysis Date: 10/17/2008 3:04:08 PM

Benzene	22.04	µg/L	1.0	110	86.8	120			
Toluene	20.89	µg/L	1.0	104	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.524	µg/L	0	95.2	59.3	133			
Surr: 4-Bromofluorobenzene	9.768	µg/L	0	97.7	80.4	119			
Surr: Dibromofluoromethane	10.34	µg/L	0	103	59.5	134			
Surr: Toluene-d8	10.71	µg/L	0	107	53.5	136			

## Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

10/16/2008

Work Order Number 0810328

Received by: AT

Checklist completed by:

*[Signature]*  
Signature

Sample ID labels checked by:

*AT*  
Initials

10/15/08  
Date

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Container/Temp Blank temperature?

2°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

Turn-Around Time:

Client: Western Refining (Blmfd)

Mailing Address: #50 CR

Bloomfield. UM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

☐ Other☐ EDD (Type)

Sampler: Bob

On Ice: ☒ Yes

Complete Temperature: 7

Date	Time	Matrix	Sample Request ID
------	------	--------	-------------------

Container Type and #	Preservative Type
-------------------------	----------------------

HEAL No.

10-15-08	8:40
----------	------

 $H_2O$ 

TK 33

3-10A

HCl

7

1

Date:	Time:
-------	-------

10-15-08 2:45

Relinquished by:

Kenner

Date:	Time:
-------	-------

Relinquished by:

~~Received by:~~

Date \_\_\_\_\_ Time \_\_\_\_\_

Received by:

Date Time

Remarks:

Time

Time

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

...this serves as notice of this possibility. Any sub-contracted data will be clearly notated on the annual report.

COVER LETTER

Saturday, October 18, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: TK #33 10/8/08

Order No.: 0810255

Dear Cindy Hurtado:

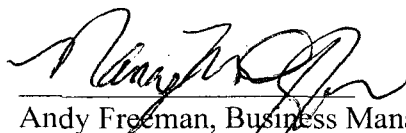
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 10/10/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 18-Oct-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33 10/8/08  
**Lab Order:** 0810255

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0810255-01A	TK #33	R30668	EPA Method 8260: Volatiles Short List	10/8/2008 11:10:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 18-Oct-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0810255  
**Project:** TK #33 10/8/08  
**Lab ID:** 0810255-01

**Client Sample ID:** TK #33  
**Collection Date:** 10/8/2008 11:10:00 AM  
**Date Received:** 10/10/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	2.5	1.0		µg/L	1	10/13/2008 1:45:45 PM
Toluene	ND	1.0		µg/L	1	10/13/2008 1:45:45 PM
Ethylbenzene	ND	1.0		µg/L	1	10/13/2008 1:45:45 PM
Methyl tert-butyl ether (MTBE)	1.5	1.0		µg/L	1	10/13/2008 1:45:45 PM
Xylenes, Total	ND	2.0		µg/L	1	10/13/2008 1:45:45 PM
Surr: 1,2-Dichloroethane-d4	79.9	59.3-133		%REC	1	10/13/2008 1:45:45 PM
Surr: 4-Bromofluorobenzene	86.6	80.4-119		%REC	1	10/13/2008 1:45:45 PM
Surr: Dibromofluoromethane	89.1	59.5-134		%REC	1	10/13/2008 1:45:45 PM
Surr: Toluene-d8	88.0	53.5-136		%REC	1	10/13/2008 1:45:45 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: TK #33 10/8/08

Work Order: 081025

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R30668 Analysis Date: 10/13/2008 8:31:14 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	2.0

Sample ID: 100ng lcs

LCS

Batch ID: R30668 Analysis Date: 10/13/2008 9:28:03 AM

Benzene	21.10	µg/L	1.0	106	86.8	120
Toluene	20.19	µg/L	1.0	101	64.1	127

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

10/10/2008

Work Order Number 0810255

Received by: TLS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

3°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action



COVER LETTER

Monday, October 13, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: TK #33 4th QTR Oct 1, 2008

Order No.: 0810027

Dear Cindy Hurtado:

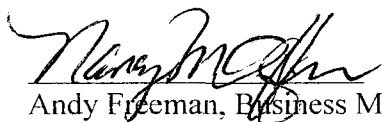
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 10/2/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425

AZ license # AZ0682

ORELAP Lab # NM100001

Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 13-Oct-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33 4th QTR Oct 1, 2008  
**Lab Order:** 0810027

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0810027-01A	TK #33	R30544	EPA Method 8260: Volatiles Short List	10/1/2008 10:10:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 13-Oct-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0810027  
**Project:** TK #33 4th QTR Oct 1, 2008  
**Lab ID:** 0810027-01

**Client Sample ID:** TK #33  
**Collection Date:** 10/1/2008 10:10:00 AM  
**Date Received:** 10/2/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	3.2	1.0		µg/L	1	10/7/2008 6:57:08 AM
Toluene	ND	1.0		µg/L	1	10/7/2008 6:57:08 AM
Ethylbenzene	ND	1.0		µg/L	1	10/7/2008 6:57:08 AM
Methyl tert-butyl ether (MTBE)	1.5	1.0		µg/L	1	10/7/2008 6:57:08 AM
Xylenes, Total	ND	2.0		µg/L	1	10/7/2008 6:57:08 AM
Surr: 1,2-Dichloroethane-d4	91.1	59.3-133		%REC	1	10/7/2008 6:57:08 AM
Surr: 4-Bromofluorobenzene	91.8	80.4-119		%REC	1	10/7/2008 6:57:08 AM
Surr: Dibromofluoromethane	101	59.5-134		%REC	1	10/7/2008 6:57:08 AM
Surr: Toluene-d8	101	53.5-136		%REC	1	10/7/2008 6:57:08 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: TK #33 4th QTR Oct 1, 2008

Work Order: 0810027

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 0810027-01a msd			MSD		Batch ID: R30544		Analysis Date: 10/7/2008 7:54:38 AM		
Benzene	23.58	µg/L	1.0	102	72.4	126	5.59	20	
Toluene	21.47	µg/L	1.0	107	79.2	115	10.9	20	
Surr: 1,2-Dichloroethane-d4	9.068	µg/L	0	90.7	59.3	133	0	0	
Surr: 4-Bromofluorobenzene	9.978	µg/L	0	99.8	80.4	119	0	0	
Surr: Dibromofluoromethane	9.100	µg/L	0	91.0	59.5	134	0	0	
Surr: Toluene-d8	9.934	µg/L	0	99.3	53.5	136	0	0	

Sample ID: b3			MBLK		Batch ID: R30544		Analysis Date: 10/7/2008 12:07:31 AM		
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	8.956	µg/L	0	89.6	59.3	133			
Surr: 4-Bromofluorobenzene	9.140	µg/L	0	91.4	80.4	119			
Surr: Dibromofluoromethane	8.856	µg/L	0	88.6	59.5	134			
Surr: Toluene-d8	9.644	µg/L	0	96.4	53.5	136			

Sample ID: 100ng lcs			LCS		Batch ID: R30544		Analysis Date: 10/7/2008 1:05:20 AM		
Benzene	22.74	µg/L	1.0	114	86.8	120			
Toluene	18.89	µg/L	1.0	94.5	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.084	µg/L	0	90.8	59.3	133			
Surr: 4-Bromofluorobenzene	10.36	µg/L	0	104	80.4	119			
Surr: Dibromofluoromethane	9.796	µg/L	0	98.0	59.5	134			
Surr: Toluene-d8	8.952	µg/L	0	89.5	53.5	136			

Sample ID: 0810027-01a ms			MS		Batch ID: R30544		Analysis Date: 10/7/2008 7:26:01 AM		
Benzene	24.94	µg/L	1.0	109	72.4	126			
Toluene	19.26	µg/L	1.0	96.3	79.2	115			
Surr: 1,2-Dichloroethane-d4	8.898	µg/L	0	89.0	59.3	133			
Surr: 4-Bromofluorobenzene	9.072	µg/L	0	90.7	80.4	119			
Surr: Dibromofluoromethane	9.052	µg/L	0	90.5	59.5	134			
Surr: Toluene-d8	8.782	µg/L	0	87.8	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

10/2/2008

Work Order Number 0810027

Received by: ARS

Checklist completed by:

Signature

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

2°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action





## COVER LETTER

Monday, October 06, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: Tank 33

Order No.: 0809554

Dear Cindy Hurtado:

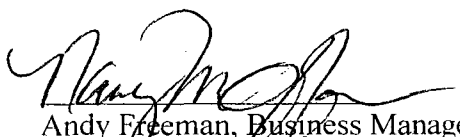
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 9/26/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 06-Oct-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Tank 33  
**Lab Order:** 0809554

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0809554-01A	TK #33	R30502	EPA Method 8260: Volatiles Short List	9/25/2008 7:30:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 06-Oct-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0809554  
**Project:** Tank 33  
**Lab ID:** 0809554-01

**Client Sample ID:** TK #33  
**Collection Date:** 9/25/2008 7:30:00 AM  
**Date Received:** 9/26/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	4.6	1.0		µg/L	1	10/2/2008 3:59:45 PM
Toluene	ND	1.0		µg/L	1	10/2/2008 3:59:45 PM
Ethylbenzene	ND	1.0		µg/L	1	10/2/2008 3:59:45 PM
Methyl tert-butyl ether (MTBE)	1.7	1.0		µg/L	1	10/2/2008 3:59:45 PM
Xylenes, Total	ND	2.0		µg/L	1	10/2/2008 3:59:45 PM
Surr: 1,2-Dichloroethane-d4	82.6	59.3-133		%REC	1	10/2/2008 3:59:45 PM
Surr: 4-Bromofluorobenzene	89.4	80.4-119		%REC	1	10/2/2008 3:59:45 PM
Surr: Dibromofluoromethane	89.2	59.5-134		%REC	1	10/2/2008 3:59:45 PM
Surr: Toluene-d8	86.1	53.5-136		%REC	1	10/2/2008 3:59:45 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: Tank 33

Work Order: 0809554

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R30502 Analysis Date: 10/2/2008 9:34:44 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	8.328	µg/L	0	83.3	59.3	133			
Surr: 4-Bromofluorobenzene	8.942	µg/L	0	89.4	80.4	119			
Surr: Dibromofluoromethane	8.918	µg/L	0	89.2	59.5	134			
Surr: Toluene-d8	8.854	µg/L	0	88.5	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R30502 Analysis Date: 10/2/2008 10:31:58 AM

Benzene	21.36	µg/L	1.0	107	86.8	120			
Toluene	19.60	µg/L	1.0	98.0	64.1	127			
Surr: 1,2-Dichloroethane-d4	8.222	µg/L	0	82.2	59.3	133			
Surr: 4-Bromofluorobenzene	9.033	µg/L	0	90.3	80.4	119			
Surr: Dibromofluoromethane	9.032	µg/L	0	90.3	59.5	134			
Surr: Toluene-d8	8.676	µg/L	0	86.8	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

9/26/2008

Work Order Number 0809554

Received by: AMF

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☒

No ☐

N/A ☐

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

6°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action



**CHAIN-OF-CUSTODY RECORD**

Client: Western Refinery (Blafld)

Address: #50 CR 4990  
Bloomfield, NM 87413

Phone #: 505-632-4161

Fax #: 505-632-3911

Date: 9-25-08 Time: 7:30 Matrix: H<sub>2</sub>O Sample I.D. No.: TK 33

QA/QC Package:

Std ☐ Level 4 ☒

Other:

Project Name: TANK 33

Project #:

Project Manager:

Sampler: Bob

Sample Temperature: 6°C

Number/Volume

Preservative

HgCl<sub>2</sub> HNO<sub>3</sub>

HEAL No.

9-25-08 7:30 H<sub>2</sub>O TK 33 3-VOA HCl 0809551-1

Date:

9-25-08 2:45

Relinquished By: (Signature)

Robert Trabon

Received By: (Signature)

4/26/08 10:50

Remarks:

**ANALYSIS REQUEST**

BTEX + MTBE + TPB (Gasoline Only)

BTEX + MTBE + TPB (Gas/Diesel)

TPH (Method 418.1)

EDB (Method 504.1)

EDC (Method 8021)

8310 (PNA or PAH)

RCRA 8 Metals

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / PCB's (8082)

8260B (VOA) BTEX, MTBE

8270 (Semi-VOA)

Air Bubbles or Headspace (Y or N)



## COVER LETTER

Thursday, September 25, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911  
RE: TK #33

Order No.: 0809400

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 9/19/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 25-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33  
**Lab Order:** 0809400

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0809400-01A	TK #33	R30327	EPA Method 8260: Volatiles Short List	9/18/2008 1:45:00 PM



**Hall Environmental Analysis Laboratory, Inc.**

Date: 25-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0809400  
**Project:** TK #33  
**Lab ID:** 0809400-01

**Client Sample ID:** TK #33  
**Collection Date:** 9/18/2008 1:45:00 PM  
**Date Received:** 9/19/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	8.2	1.0		µg/L	1	9/22/2008 10:44:43 AM
Toluene	ND	1.0		µg/L	1	9/22/2008 10:44:43 AM
Ethylbenzene	ND	1.0		µg/L	1	9/22/2008 10:44:43 AM
Methyl tert-butyl ether (MTBE)	1.7	1.0		µg/L	1	9/22/2008 10:44:43 AM
Xylenes, Total	6.7	2.0		µg/L	1	9/22/2008 10:44:43 AM
Surr: 1,2-Dichloroethane-d4	84.2	59.3-133		%REC	1	9/22/2008 10:44:43 AM
Surr: 4-Bromofluorobenzene	92.4	80.4-119		%REC	1	9/22/2008 10:44:43 AM
Surr: Dibromofluoromethane	91.2	59.5-134		%REC	1	9/22/2008 10:44:43 AM
Surr: Toluene-d8	86.6	53.5-136		%REC	1	9/22/2008 10:44:43 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: TK #33

Work Order: 0809400

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 0809400-01a MSD

MSD

Batch ID: R30327

Analysis Date: 9/22/2008 11:42:03 AM

Benzene	27.17	µg/L	1.0	94.6	72.4	126	2.44	20	
Toluene	18.78	µg/L	1.0	89.8	79.2	115	2.74	20	
Surr: 1,2-Dichloroethane-d4	8.468	µg/L	0	84.7	59.3	133	0	0	
Surr: 4-Bromofluorobenzene	9.243	µg/L	0	92.4	80.4	119	0	0	
Surr: Dibromofluoromethane	8.904	µg/L	0	89.0	59.5	134	0	0	
Surr: Toluene-d8	8.713	µg/L	0	87.1	53.5	136	0	0	

Sample ID: 5ml rb

MBLK

Batch ID: R30327

Analysis Date: 9/22/2008 8:39:57 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	8.177	µg/L	0	81.8	59.3	133			
Surr: 4-Bromofluorobenzene	9.093	µg/L	0	90.9	80.4	119			
Surr: Dibromofluoromethane	8.404	µg/L	0	84.0	59.5	134			
Surr: Toluene-d8	8.834	µg/L	0	88.3	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R30327

Analysis Date: 9/22/2008 9:47:31 AM

Benzene	19.02	µg/L	1.0	95.1	86.8	120			
Toluene	17.88	µg/L	1.0	89.4	64.1	127			
Surr: 1,2-Dichloroethane-d4	8.393	µg/L	0	83.9	59.3	133			
Surr: 4-Bromofluorobenzene	9.491	µg/L	0	94.9	80.4	119			
Surr: Dibromofluoromethane	8.760	µg/L	0	87.6	59.5	134			
Surr: Toluene-d8	8.356	µg/L	0	83.6	53.5	136			

Sample ID: 0809400-01a MS

MS

Batch ID: R30327

Analysis Date: 9/22/2008 11:13:21 AM

Benzene	27.83	µg/L	1.0	98.0	72.4	126			
Toluene	19.30	µg/L	1.0	92.4	79.2	115			
Surr: 1,2-Dichloroethane-d4	8.586	µg/L	0	85.9	59.3	133			
Surr: 4-Bromofluorobenzene	9.213	µg/L	0	92.1	80.4	119			
Surr: Dibromofluoromethane	9.149	µg/L	0	91.5	59.5	134			
Surr: Toluene-d8	8.841	µg/L	0	88.4	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

9/19/2008

Work Order Number 0809400

Received by: ARS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

6°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.34  
[www.hallenvironmental.com](http://www.hallenvironmental.com)

QA/QC Package:

Std ☐ Level 4 ☒

Other:

Project Name:

Client: Western Refinery

**Address:**

#50 CR 4990

Bloomfield, NM 87413

Project Manager:

Phone #:

505-632-4161

Fax #:

505-632-3911

Date: \_\_\_\_\_

Date	Time
9-18-08	1:45

Matrix	H <sub>2</sub> O
--------	------------------

Sample I.D. No. TK#33

Number/Volume
3-12A

Preservative

$$\text{HgCl}_2 \quad \text{HNO}_3$$

—

171

3-12A

Date: \_\_\_\_\_

Date:	Time:
9:18-09	2:30

Relinquished By: (Signature)

Relinquished By: (Signature) *Robert Krabben*

Received By: (Signature)

Received By: (Signature)	11:55 9/19/08
--------------------------	---------------

Date: \_\_\_\_\_

Time:

Relinquished By: (Signature)

Received By: (Signature)

Received By: (Signature)

# ANALYSIS REQUEST

[illegible]

Remarks:



## COVER LETTER

Monday, September 15, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: TK #33 9-9-08

Order No.: 0809183

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 9/10/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001  
Texas Lab# T104704424-08-TX



**Hall Environmental Analysis Laboratory, Inc.**

Date: 15-Sep-08

**CLIENT:** Western Refining Southwest, Inc.**Project:** TK #33 9-9-08**Lab Order:** 0809183**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0809183-01A	TK #33	R30169	EPA Method 8260: Volatiles Short List	9/9/2008 9:00:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 15-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0809183  
**Project:** TK #33 9-9-08  
**Lab ID:** 0809183-01

**Client Sample ID:** TK #33  
**Collection Date:** 9/9/2008 9:00:00 AM  
**Date Received:** 9/10/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	10	1.0		µg/L	1	9/10/2008 4:59:39 PM
Toluene	2.3	1.0		µg/L	1	9/10/2008 4:59:39 PM
Ethylbenzene	ND	1.0		µg/L	1	9/10/2008 4:59:39 PM
Methyl tert-butyl ether (MTBE)	1.8	1.0		µg/L	1	9/10/2008 4:59:39 PM
Xylenes, Total	16	2.0		µg/L	1	9/10/2008 4:59:39 PM
Surr: 1,2-Dichloroethane-d4	93.3	59.3-133		%REC	1	9/10/2008 4:59:39 PM
Surr: 4-Bromofluorobenzene	96.0	80.4-119		%REC	1	9/10/2008 4:59:39 PM
Surr: Dibromofluoromethane	93.5	59.5-134		%REC	1	9/10/2008 4:59:39 PM
Surr: Toluene-d8	93.8	53.5-136		%REC	1	9/10/2008 4:59:39 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

15-Sep-08

Lab Order: 0809183

Client: Western Refining Southwest, Inc.

Project: TK #33 9-9-08

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0809183-01A	TK #33	9/9/2008 9:00:00 AM	Aqueous	EPA Method 8260: Volatiles Short List	R30169		9/10/2008



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: TK #33 9-9-08

Work Order: 0809183

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 0809183-01a MSD

MSD

Batch ID: R30169 Analysis Date: 9/10/2008 5:57:31 PM

Benzene	29.09	µg/L	1.0	95.2	72.4	126	3.05	20	
Toluene	20.41	µg/L	1.0	90.7	79.2	115	7.89	20	
Surr: 1,2-Dichloroethane-d4	9.486	µg/L	0	94.9	59.3	133	0	0	
Surr: 4-Bromofluorobenzene	9.400	µg/L	0	94.0	80.4	119	0	0	
Surr: Dibromofluoromethane	9.142	µg/L	0	91.4	59.5	134	0	0	
Surr: Toluene-d8	8.582	µg/L	0	85.8	53.5	136	0	0	

Sample ID: b3

MBLK

Batch ID: R30169 Analysis Date: 9/10/2008 12:20:40 PM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.470	µg/L	0	94.7	59.3	133			
Surr: 4-Bromofluorobenzene	9.626	µg/L	0	96.3	80.4	119			
Surr: Dibromofluoromethane	8.934	µg/L	0	89.3	59.5	134			
Surr: Toluene-d8	9.850	µg/L	0	98.5	53.5	136			

Sample ID: ,100ng lcs\_d

LCS

Batch ID: R30169 Analysis Date: 9/10/2008 2:30:29 PM

Benzene	22.83	µg/L	1.0	114	86.8	120			
Toluene	19.80	µg/L	1.0	99.0	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.070	µg/L	0	90.7	59.3	133			
Surr: 4-Bromofluorobenzene	9.852	µg/L	0	98.5	80.4	119			
Surr: Dibromofluoromethane	9.442	µg/L	0	94.4	59.5	134			
Surr: Toluene-d8	8.914	µg/L	0	89.1	53.5	136			

Sample ID: 0809183-01a MS

MS

Batch ID: R30169 Analysis Date: 9/10/2008 5:28:31 PM

Benzene	30.00	µg/L	1.0	99.7	72.4	126			
Toluene	22.08	µg/L	1.0	99.1	79.2	115			
Surr: 1,2-Dichloroethane-d4	9.076	µg/L	0	90.8	59.3	133			
Surr: 4-Bromofluorobenzene	9.088	µg/L	0	90.9	80.4	119			
Surr: Dibromofluoromethane	9.594	µg/L	0	95.9	59.5	134			
Surr: Toluene-d8	8.632	µg/L	0	86.3	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

9/10/2008

Work Order Number 0809183

Received by: ARS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	

Container/Temp Blank temperature?

3°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_


Corrective Action \_\_\_\_\_

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.345.4107  
[www.hallenviro.com](http://www.hallenviro.com)

QA/QC Package:

Std

Level 4 

Other:

Client: Western Refinery (B|mf|d)

Project Name:

TK #33 9-9-08

Project #:

Address: #50 CR 4990

Bloomfield, NM 87413

Project Manager:

Sampler: BOP

Sample Temperature: 0.6

5

Number/Volume	HgCl <sub>2</sub>	HNO <sub>3</sub>	HEAL No. 0809183

HEAL No.

$$\text{HgCl}_2 \quad | \quad \text{HNO}_3$$
$$\text{HgCl}_2 \quad | \quad \text{HNO}_3$$

12/1	
------	--

3-VOA

TK#33

9-9-08 9:00

Date:	Time:	Relinquished By: (Signature)
9-9-09	2:50	Peter Krahn

Relinquished By: (Signature)

Received By: (Signature)

10	08
9	16
05	10

Relinquished By: (Signature)

Received By: (Signature)

—

Remarks:

# ANALYSIS REQUEST

[illegible]

Remarks:

COVER LETTER

Thursday, September 04, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911  
RE: TK #33

Order No.: 0808412

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 8/26/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.**Project:** TK #33**Lab Order:** 0808412**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808412-01A	TK #33	R30028	EPA Method 8260: Volatiles Short List	8/25/2008 8:27:00 AM
0808412-01A	TK #33	R30028	EPA Method 8260: Volatiles Short List	8/25/2008 8:27:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808412  
**Project:** TK #33  
**Lab ID:** 0808412-01

**Client Sample ID:** TK #33  
**Collection Date:** 8/25/2008 8:27:00 AM  
**Date Received:** 8/26/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	25	1.0		µg/L	1	9/2/2008 1:57:53 PM
Toluene	10	1.0		µg/L	1	9/2/2008 1:57:53 PM
Ethylbenzene	ND	1.0		µg/L	1	9/2/2008 1:57:53 PM
Methyl tert-butyl ether (MTBE)	1.7	1.0		µg/L	1	9/2/2008 1:57:53 PM
Xylenes, Total	790	20		µg/L	10	9/2/2008 3:27:39 PM
Surr: 1,2-Dichloroethane-d4	98.3	59.3-133		%REC	1	9/2/2008 1:57:53 PM
Surr: 4-Bromofluorobenzene	56.0	80.4-119	S	%REC	1	9/2/2008 1:57:53 PM
Surr: Dibromofluoromethane	104	59.5-134		%REC	1	9/2/2008 1:57:53 PM
Surr: Toluene-d8	80.7	53.5-136		%REC	1	9/2/2008 1:57:53 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: TK #33

Work Order: 080841

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R30028 Analysis Date: 9/2/2008 9:31:51 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.596	µg/L	0	96.0	59.3	133			
Surr: 4-Bromofluorobenzene	8.716	µg/L	0	87.2	80.4	119			
Surr: Dibromofluoromethane	9.414	µg/L	0	94.1	59.5	134			
Surr: Toluene-d8	8.514	µg/L	0	85.1	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R30028 Analysis Date: 9/2/2008 10:29:28 AM

Benzene	23.04	µg/L	1.0	115	86.8	120			
Toluene	20.66	µg/L	1.0	103	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.466	µg/L	0	94.7	59.3	133			
Surr: 4-Bromofluorobenzene	9.184	µg/L	0	91.8	80.4	119			
Surr: Dibromofluoromethane	10.05	µg/L	0	101	59.5	134			
Surr: Toluene-d8	9.374	µg/L	0	93.7	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/26/2008

Work Order Number 0808412

Received by: AT

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Container/Temp Blank temperature?

20°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Western Bluff

Date contacted:

8/26/08

Person contacted

CH

Contacted by:

AT

Regarding:

Cooler Temp (Sample temp) 20°C

Comments:

per CH analyze samples / AT 8/26/08

Corrective Action



QA / QC Package: ☐ Level 4 ☒

**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**  
4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.345.4900  
[www.hallenvironmental.com](http://www.hallenvironmental.com)

CHAIN-OF-CUSTODY RECORD				QA/QC Package: Std <input type="checkbox"/> Level 4 <input checked="" type="checkbox"/>			
Client: Western Refining				Other:			
Address: #50 CR 4990 Bloomfield, NM 87413				Project Name: TK # 33			
				Project #:			
				Project Manager:			
Phone #: 505-632-4161				Sampler: Cindy Bot			
Fax #: 505-632-3911				Sample Temperature: 20			
Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative		HEAL No.
					HgCl <sub>2</sub>	HNO <sub>3</sub>	
8-25-08	827A	H <sub>2</sub> O	TK # 33	3-10A		Hcl	0808412 -1
Date: 8-25-08	Time: 906A	Relinquished By: (Signature) Cindy Bot		Relinquished By: (Signature)		Received By: (Signature) 8/26/08	
Date:	Time:	Relinquished By: (Signature)		Relinquished By: (Signature)		Received By: (Signature) 8/26/08	

## COVER LETTER

Wednesday, August 27, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33

Order No.: 0808319

Dear Cindy Hurtado:

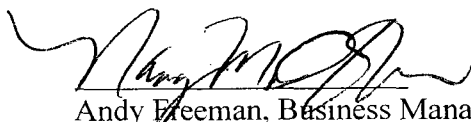
Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 8/20/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 27-Aug-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33  
**Lab Order:** 0808319

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808319-01A	TK #33	R29853	EPA Method 8260: Volatiles Short List	8/19/2008 12:15:00 PM
0808319-01A	TK #33	R29853	EPA Method 8260: Volatiles Short List	8/19/2008 12:15:00 PM
0808319-02A	Trip Blank	R29853	EPA Method 8260: Volatiles Short List	

**Hall Environmental Analysis Laboratory, Inc.**

Date: 27-Aug-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808319  
**Project:** TK #33  
**Lab ID:** 0808319-01

**Client Sample ID:** TK #33  
**Collection Date:** 8/19/2008 12:15:00 PM  
**Date Received:** 8/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	3.6	1.0		µg/L	1	8/20/2008 3:37:19 PM
Toluene	2.2	1.0		µg/L	1	8/20/2008 3:37:19 PM
Ethylbenzene	ND	1.0		µg/L	1	8/20/2008 3:37:19 PM
Methyl tert-butyl ether (MTBE)	2.0	1.0		µg/L	1	8/20/2008 3:37:19 PM
Xylenes, Total	24	2.0		µg/L	1	8/20/2008 3:37:19 PM
Surr: 1,2-Dichloroethane-d4	104	59.3-133		%REC	1	8/20/2008 3:37:19 PM
Surr: 4-Bromofluorobenzene	101	80.4-119		%REC	1	8/20/2008 3:37:19 PM
Surr: Dibromofluoromethane	103	59.5-134		%REC	1	8/20/2008 3:37:19 PM
Surr: Toluene-d8	96.2	53.5-136		%REC	1	8/20/2008 3:37:19 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 27-Aug-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808319  
**Project:** TK #33  
**Lab ID:** 0808319-02

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Date Received:** 8/20/2008  
**Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/20/2008 4:34:49 PM
Toluene	ND	1.0		µg/L	1	8/20/2008 4:34:49 PM
Ethylbenzene	ND	1.0		µg/L	1	8/20/2008 4:34:49 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/20/2008 4:34:49 PM
Xylenes, Total	ND	2.0		µg/L	1	8/20/2008 4:34:49 PM
Surr: 1,2-Dichloroethane-d4	94.2	59.3-133		%REC	1	8/20/2008 4:34:49 PM
Surr: 4-Bromofluorobenzene	101	80.4-119		%REC	1	8/20/2008 4:34:49 PM
Surr: Dibromofluoromethane	97.1	59.5-134		%REC	1	8/20/2008 4:34:49 PM
Surr: Toluene-d8	99.2	53.5-136		%REC	1	8/20/2008 4:34:49 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: TK #33

Work Order: 0808319

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R29853 Analysis Date: 8/20/2008 8:38:39 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.278	µg/L	0	92.8	59.3	133			
Surr: 4-Bromofluorobenzene	9.966	µg/L	0	99.7	80.4	119			
Surr: Dibromofluoromethane	9.116	µg/L	0	91.2	59.5	134			
Surr: Toluene-d8	9.667	µg/L	0	96.7	53.5	136			

Sample ID: 100ng lcs\_b

LCS

Batch ID: R29853 Analysis Date: 8/20/2008 10:46:14 AM

Benzene	20.50	µg/L	1.0	102	86.8	120			
Toluene	19.92	µg/L	1.0	99.6	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.346	µg/L	0	93.5	59.3	133			
Surr: 4-Bromofluorobenzene	10.35	µg/L	0	104	80.4	119			
Surr: Dibromofluoromethane	9.976	µg/L	0	99.8	59.5	134			
Surr: Toluene-d8	9.834	µg/L	0	98.3	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/20/2008

Work Order Number 0808319

Received by: AT

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Container/Temp Blank temperature?

1°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

# CHAIN-OF-CUSTODY RECORD

Client: Western Refining (Blmfld)

Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

Fax #: 505-632-3911

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative	HEAL No.
8-19-08	12:15	H <sub>2</sub> O	TK#33	3-10A	HgCl <sub>2</sub> HNO <sub>3</sub>	0808319
			Trip Blank			-1
						-2

QA/QC Package:

Std ☐

Level 4 ☒

Other:

Project Name:

TK#33

Project #:

Project Manager:

Sampler: Bab

Sample Temperature: 10

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE, Suite D

Albuquerque, New Mexico 87109

Tel. 505.345.3975 Fax 505.345.4107

www.hallenvironmental.com

## ANALYSIS REQUEST

BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F <sup>-</sup> , Cl <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , PO <sub>4</sub> <sup>3-</sup> , SO <sub>4</sub> <sup>2-</sup> )	8081 Pesticides / PCB's (8082)	8260B (VOA) <u>BTEX, MTBE only</u>	8270 (Semi-VOA)	Air Bubbles or Headspace (Y or N)
									X		

Remarks:

Received By: (Signature) [Signature] 8/20/08

Received By: (Signature)

Relinquished By: (Signature) [Signature]

Relinquished By: (Signature)

Date: 8-19-08

Date: 130p



## COVER LETTER

Wednesday, August 27, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33 8/14/08

Order No.: 0808261

Dear Cindy Hurtado:

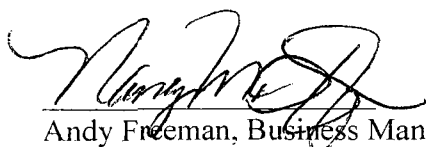
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 8/15/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 27-Aug-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33 8/14/08  
**Lab Order:** 0808261

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808261-01A	TK #33	R29845	EPA Method 8260: Volatiles Short List	8/14/2008 8:35:00 AM
0808261-01A	TK #33	R29845	EPA Method 8260: Volatiles Short List	8/14/2008 8:35:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 27-Aug-08

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** TK #33**Lab Order:** 0808261**Collection Date:** 8/14/2008 8:35:00 AM**Project:** TK #33 8/14/08**Date Received:** 8/15/2008**Lab ID:** 0808261-01**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	110	5.0		µg/L	5	8/19/2008 3:49:04 PM
Toluene	120	5.0		µg/L	5	8/19/2008 3:49:04 PM
Ethylbenzene	6.6	1.0		µg/L	1	8/19/2008 2:50:17 PM
Methyl tert-butyl ether (MTBE)	1.9	1.0		µg/L	1	8/19/2008 2:50:17 PM
Xylenes, Total	540	10		µg/L	5	8/19/2008 3:49:04 PM
Surr: 1,2-Dichloroethane-d4	112	59.3-133		%REC	1	8/19/2008 2:50:17 PM
Surr: 4-Bromofluorobenzene	106	80.4-119		%REC	1	8/19/2008 2:50:17 PM
Surr: Dibromofluoromethane	97.2	59.5-134		%REC	1	8/19/2008 2:50:17 PM
Surr: Toluene-d8	115	53.5-136		%REC	1	8/19/2008 2:50:17 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: TK #33 8/14/08

Work Order: 0808261

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R29845 Analysis Date: 8/19/2008 9:01:51 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.489	µg/L	0	94.9	59.3	133			
Surr: 4-Bromofluorobenzene	9.884	µg/L	0	98.8	80.4	119			
Surr: Dibromofluoromethane	9.353	µg/L	0	93.5	59.5	134			
Surr: Toluene-d8	9.731	µg/L	0	97.3	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R29845 Analysis Date: 8/19/2008 9:59:13 AM

Benzene	20.63	µg/L	1.0	103	86.8	120			
Toluene	19.97	µg/L	1.0	99.8	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.511	µg/L	0	95.1	59.3	133			
Surr: 4-Bromofluorobenzene	9.883	µg/L	0	98.8	80.4	119			
Surr: Dibromofluoromethane	9.703	µg/L	0	97.0	59.5	134			
Surr: Toluene-d8	9.651	µg/L	0	96.5	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/15/2008

Work Order Number 0808261

Received by: TLS

Checklist completed by:

Signature

8/15/08

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Container/Temp Blank temperature?	13°	<6° C Acceptable If given sufficient time to cool.		

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_





## COVER LETTER

Friday, August 15, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911  
RE: TK #33 8/5/08

Order No.: 0808080

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 8/6/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 15-Aug-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33 8/5/08  
**Lab Order:** 0808080

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808080-01A	TK #33	R29757	EPA Method 8260: Volatiles Short List	8/5/2008 8:10:00 AM
0808080-01A	TK #33	R29757	EPA Method 8260: Volatiles Short List	8/5/2008 8:10:00 AM



**Hall Environmental Analysis Laboratory, Inc.**

Date: 15-Aug-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808080  
**Project:** TK #33 8/5/08  
**Lab ID:** 0808080-01

**Client Sample ID:** TK #33  
**Collection Date:** 8/5/2008 8:10:00 AM  
**Date Received:** 8/6/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	25	1.0		µg/L	1	8/13/2008 6:28:26 PM
Toluene	19	1.0		µg/L	1	8/13/2008 6:28:26 PM
Ethylbenzene	ND	1.0		µg/L	1	8/13/2008 6:28:26 PM
Methyl tert-butyl ether (MTBE)	1.6	1.0		µg/L	1	8/13/2008 6:28:26 PM
Xylenes, Total	210	2.0		µg/L	1	8/13/2008 6:28:26 PM
Surr: 1,2-Dichloroethane-d4	99.4	59.3-133		%REC	1	8/13/2008 6:28:26 PM
Surr: 4-Bromofluorobenzene	97.7	80.4-119		%REC	1	8/13/2008 6:28:26 PM
Surr: Dibromofluoromethane	103	59.5-134		%REC	1	8/13/2008 6:28:26 PM
Surr: Toluene-d8	89.5	53.5-136		%REC	1	8/13/2008 6:28:26 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: TK #33 8/5/08

Work Order: 080808

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R29757 Analysis Date: 8/13/2008 12:36:05 PM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.708	µg/L	0	97.1	59.3	133			
Surr: 4-Bromofluorobenzene	9.956	µg/L	0	99.6	80.4	119			
Surr: Dibromofluoromethane	9.076	µg/L	0	90.8	59.5	134			
Surr: Toluene-d8	10.07	µg/L	0	101	53.5	136			

Sample ID: b6

MBLK

Batch ID: R29757 Analysis Date: 8/14/2008 12:44:10 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.412	µg/L	0	94.1	59.3	133			
Surr: 4-Bromofluorobenzene	10.42	µg/L	0	104	80.4	119			
Surr: Dibromofluoromethane	9.600	µg/L	0	96.0	59.5	134			
Surr: Toluene-d8	9.830	µg/L	0	98.3	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R29757 Analysis Date: 8/13/2008 2:03:00 PM

Benzene	19.87	µg/L	1.0	99.3	86.8	120			
Toluene	18.94	µg/L	1.0	94.7	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.822	µg/L	0	98.2	59.3	133			
Surr: 4-Bromofluorobenzene	10.22	µg/L	0	102	80.4	119			
Surr: Dibromofluoromethane	10.06	µg/L	0	101	59.5	134			
Surr: Toluene-d8	9.856	µg/L	0	98.6	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R29757 Analysis Date: 8/14/2008 1:41:39 AM

Benzene	19.70	µg/L	1.0	98.5	86.8	120			
Toluene	19.35	µg/L	1.0	96.8	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.168	µg/L	0	91.7	59.3	133			
Surr: 4-Bromofluorobenzene	10.39	µg/L	0	104	80.4	119			
Surr: Dibromofluoromethane	9.286	µg/L	0	92.9	59.5	134			
Surr: Toluene-d8	9.678	µg/L	0	96.8	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/6/2008

Work Order Number 0808080

Received by: TLS

Checklist completed by:

Signature

8/6/08

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Container/Temp Blank temperature?

3°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

# CHAIN-OF-CUSTODY RECORD

Client: Western Refining (Bmsf)

Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

Fax #: 505-632-3911

Date

Time

Matrix

Sample I.D. No.

Number/Volume

Preservative

HgCl<sub>2</sub>

HNO<sub>3</sub>

HEAL No.

0808080

8-5-08 8:10

H<sub>2</sub>O

TK #33

3-VOA

HCl

QA/QC Package:

Std ☐

Level 4 ☒

Other:

Project Name:

TK #33 8-5-08

Project #:

Project Manager:

Sample: Bob

Sample Temperature: 3°

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**  
4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.345.4107  
www.hallenvironmental.com

## ANALYSIS REQUEST

BTEX + MTBE + TPH (Gasoline Only)

TPH Method 8015B (Gas/Diesel)

TPH (Method 418.1)

EDB (Method 504.1)

EDC (Method 8021)

8310 (PNA or PAH)

RCRA 8 Metals

Anions (F, Cl, NO<sub>2</sub>, NO<sub>3</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / PCB's (8082)

8260B (VOA) BTEX, MTBE only

8270 (Semi-VOA)

Air Bubbles or Headspace (Y or N)

Remarks:

Date:

8-5-08 3:00

Relinquished By: (Signature)

Robert Braken

Received By: (Signature)

Amie Shomin

8/6/08

Date:

Time:

Relinquished By: (Signature)

Received By: (Signature)

COVER LETTER

Tuesday, August 05, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911  
RE: TK #33 7-31-08

Order No.: 0808002

Dear Cindy Hurtado:

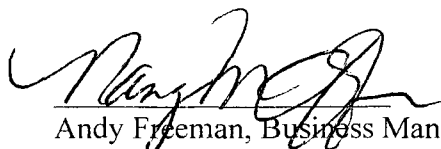
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 8/1/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33 7-31-08  
**Lab Order:** 0808002

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808002-01A	TK #33	R29585	EPA Method 8260: Volatiles Short List	7/31/2008 8:30:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 05-Aug-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808002  
**Project:** TK #33 7-31-08  
**Lab ID:** 0808002-01

**Client Sample ID:** TK #33  
**Collection Date:** 7/31/2008 8:30:00 AM  
**Date Received:** 8/1/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	71	5.0		µg/L	5	8/1/2008 11:47:08 AM
Toluene	39	5.0		µg/L	5	8/1/2008 11:47:08 AM
Ethylbenzene	ND	5.0		µg/L	5	8/1/2008 11:47:08 AM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	8/1/2008 11:47:08 AM
Xylenes, Total	430	10		µg/L	5	8/1/2008 11:47:08 AM
Surr: 1,2-Dichloroethane-d4	110	59.3-133		%REC	5	8/1/2008 11:47:08 AM
Surr: 4-Bromofluorobenzene	89.6	80.4-119		%REC	5	8/1/2008 11:47:08 AM
Surr: Dibromofluoromethane	108	59.5-134		%REC	5	8/1/2008 11:47:08 AM
Surr: Toluene-d8	89.1	53.5-136		%REC	5	8/1/2008 11:47:08 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: TK #33 7-31-08

Work Order: 0808002

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb	MBLK			Batch ID: R29585	Analysis Date: 8/1/2008 8:23:32 AM
Benzene	ND	µg/L	1.0		
Toluene	ND	µg/L	1.0		
Ethylbenzene	ND	µg/L	1.0		
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0		
Xylenes, Total	ND	µg/L	2.0		
Surr: 1,2-Dichloroethane-d4	9.608	µg/L	0	96.1	59.3 133
Surr: 4-Bromofluorobenzene	9.496	µg/L	0	95.0	80.4 119
Surr: Dibromofluoromethane	9.844	µg/L	0	98.4	59.5 134
Surr: Toluene-d8	9.126	µg/L	0	91.3	53.5 136

Sample ID: 100ng lcs		LCS			Batch ID: R29585		Analysis Date: 8/1/2008 9:50:00 AM	
Benzene	21.60	µg/L	1.0	108	86.8	120		
Toluene	20.04	µg/L	1.0	100	64.1	127		
Surr: 1,2-Dichloroethane-d4	9.518	µg/L	0	95.2	59.3	133		
Surr: 4-Bromofluorobenzene	10.16	µg/L	0	102	80.4	119		
Surr: Dibromofluoromethane	9.788	µg/L	0	97.9	59.5	134		
Surr: Toluene-d8	9.454	µg/L	0	94.5	53.5	136		

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/1/2008

Work Order Number 0808002

Received by: ARS

Checklist completed by:

Signature

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Container/Temp Blank temperature?

5°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

# Chain-of-Custody Record

Client: Western Refining (Blmfield)

Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

TK # 33 7-31-08

Project #:

Project Manager:

Sampler: Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 5°

Date Time Sample Request ID

7-31-08 8:30

TK # 33

Container Type and #

3-VOA

Preservative Type

HCl

HEAL No.

08080002

## Analysis Request

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH Method 8015B (Gas/Diesel)

TPH (Method 418.1)

EDB (Method 504.1)

EDC (Method 8260)

8310 (PNA or PAH)

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / 8082 PCB's

8260B (VOA) BTEX + MTBE only

8270 (Semi-VOA)

Air Bubbles (Y or N)

Remarks:

Date: 7-31-08

Time: 9:00

Date:

Time:

Relinquished by:

Robert Kralgen

Received by:

[Signature] 9:30 8/1/08

Received by:



www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

COVER LETTER

Monday, July 28, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911  
RE: TK #33 7/21/08

Order No.: 0807307

Dear Cindy Hurtado:

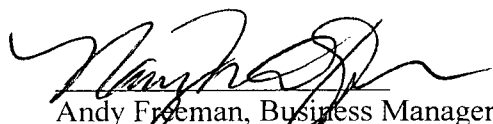
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 7/23/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 28-Jul-08

**CLIENT:** Western Refining Southwest, Inc.**Project:** TK #33 7/21/08**Lab Order:** 0807307**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0807307-01A	TK #33	R29448	EPA Method 8260: Volatiles Short List	7/23/2008 9:45:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 28-Jul-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0807307  
**Project:** TK #33 7/21/08  
**Lab ID:** 0807307-01

**Client Sample ID:** TK #33  
**Collection Date:** 7/23/2008 9:45:00 AM  
**Date Received:** 7/23/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	75	5.0		µg/L	5	7/23/2008 4:02:21 PM
Toluene	54	5.0		µg/L	5	7/23/2008 4:02:21 PM
Ethylbenzene	ND	5.0		µg/L	5	7/23/2008 4:02:21 PM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	7/23/2008 4:02:21 PM
Xylenes, Total	450	10		µg/L	5	7/23/2008 4:02:21 PM
Surr: 1,2-Dichloroethane-d4	102	59.3-133		%REC	5	7/23/2008 4:02:21 PM
Surr: 4-Bromofluorobenzene	80.1	80.4-119	S	%REC	5	7/23/2008 4:02:21 PM
Surr: Dibromofluoromethane	107	59.5-134		%REC	5	7/23/2008 4:02:21 PM
Surr: Toluene-d8	94.5	53.5-136		%REC	5	7/23/2008 4:02:21 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: TK #33 7/21/08

Work Order: 080730

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb		MBLK		Batch ID: R29448		Analysis Date: 7/23/2008 8:28:09 AM	
Benzene	ND	µg/L	1.0				
Toluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Surr: 1,2-Dichloroethane-d4	9.078	µg/L	0	90.8	59.3	133	
Surr: 4-Bromofluorobenzene	9.726	µg/L	0	97.3	80.4	119	
Surr: Dibromofluoromethane	8.874	µg/L	0	88.7	59.5	134	
Surr: Toluene-d8	9.476	µg/L	0	94.8	53.5	136	

Sample ID: 100ng lcs		LCS			Batch ID: R29448		Analysis Date: 7/23/2008 9:25:42 AM	
Benzene	21.51	µg/L	1.0	108	86.8	120		
Toluene	20.35	µg/L	1.0	102	64.1	127		
Surr: 1,2-Dichloroethane-d4	9.436	µg/L	0	94.4	59.3	133		
Surr: 4-Bromofluorobenzene	9.154	µg/L	0	91.5	80.4	119		
Surr: Dibromofluoromethane	9.102	µg/L	0	91.0	59.5	134		
Surr: Toluene-d8	9.580	µg/L	0	95.8	53.5	136		

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

7/23/2008

Work Order Number 0807307

Received by: TLS

Checklist completed by:

Signature

Sample ID labels checked by:

Initials

7/23/08

Date

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☒

At 7/25/08

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

7°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

One voa was broken upon arrival. as 7/23

Corrective Action





COVER LETTER

Monday, July 28, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33 7-16-08

Order No.: 0807234

Dear Cindy Hurtado:

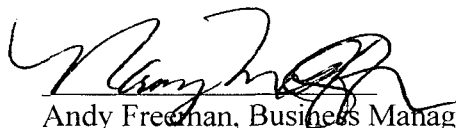
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 7/17/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 28-Jul-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33 7-16-08  
**Lab Order:** 0807234

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0807234-01A	TK #33	R29397	EPA Method 8260: Volatiles Short List	7/16/2008 10:10:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 28-Jul-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0807234  
**Project:** TK #33 7-16-08  
**Lab ID:** 0807234-01

**Client Sample ID:** TK #33  
**Collection Date:** 7/16/2008 10:10:00 AM  
**Date Received:** 7/17/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	56	5.0		µg/L	5	7/18/2008 10:48:19 AM
Toluene	43	5.0		µg/L	5	7/18/2008 10:48:19 AM
Ethylbenzene	ND	5.0		µg/L	5	7/18/2008 10:48:19 AM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	7/18/2008 10:48:19 AM
Xylenes, Total	380	10		µg/L	5	7/18/2008 10:48:19 AM
Surr: 1,2-Dichloroethane-d4	114	59.3-133		%REC	5	7/18/2008 10:48:19 AM
Surr: 4-Bromofluorobenzene	111	80.4-119		%REC	5	7/18/2008 10:48:19 AM
Surr: Dibromofluoromethane	105	59.5-134		%REC	5	7/18/2008 10:48:19 AM
Surr: Toluene-d8	104	53.5-136		%REC	5	7/18/2008 10:48:19 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: TK #33 7-16-08

Work Order: 0807234

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb MBLK

Batch ID: R29397 Analysis Date: 7/18/2008 8:52:08 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.925	µg/L	0	99.2	59.3	133			
Surr: 4-Bromofluorobenzene	10.17	µg/L	0	102	80.4	119			
Surr: Dibromofluoromethane	10.06	µg/L	0	101	59.5	134			
Surr: Toluene-d8	9.889	µg/L	0	98.9	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R29397 Analysis Date: 7/18/2008 9:49:36 AM

Benzene	20.75	µg/L	1.0	104	86.8	120			
Toluene	19.73	µg/L	1.0	98.7	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.622	µg/L	0	96.2	59.3	133			
Surr: 4-Bromofluorobenzene	10.89	µg/L	0	109	80.4	119			
Surr: Dibromofluoromethane	10.52	µg/L	0	105	59.5	134			
Surr: Toluene-d8	9.669	µg/L	0	96.7	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

7/17/2008

Work Order Number 0807234

Received by: ARS

Checklist completed by: [Signature]  
Signature

Sample ID labels checked by:

[Initials]  
Initials

7/17/08  
Date

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Container/Temp Blank temperature?

5°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_



COVER LETTER

Friday, July 18, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33

Order No.: 0807097

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 7/8/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 18-Jul-08

**CLIENT:** Western Refining Southwest, Inc.**Project:** TK #33**Lab Order:** 0807097**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0807097-01A	TK #33	R29340	EPA Method 8260: Volatiles Short List	7/7/2008 8:15:00 AM
0807097-01A	TK #33	R29304	EPA Method 8260: Volatiles Short List	7/7/2008 8:15:00 AM



**Hall Environmental Analysis Laboratory, Inc.**

Date: 18-Jul-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0807097  
**Project:** TK #33  
**Lab ID:** 0807097-01

**Client Sample ID:** TK #33  
**Collection Date:** 7/7/2008 8:15:00 AM  
**Date Received:** 7/8/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	41	1.0		µg/L	1	7/13/2008 11:23:45 AM
Toluene	42	1.0		µg/L	1	7/13/2008 11:23:45 AM
Ethylbenzene	2.8	1.0		µg/L	1	7/13/2008 11:23:45 AM
Methyl tert-butyl ether (MTBE)	2.3	1.0		µg/L	1	7/13/2008 11:23:45 AM
Xylenes, Total	410	10		µg/L	5	7/14/2008 5:21:41 PM
Surr: 1,2-Dichloroethane-d4	98.5	59.3-133		%REC	1	7/13/2008 11:23:45 AM
Surr: 4-Bromofluorobenzene	91.7	80.4-119		%REC	1	7/13/2008 11:23:45 AM
Surr: Dibromofluoromethane	96.9	59.5-134		%REC	1	7/13/2008 11:23:45 AM
Surr: Toluene-d8	95.6	53.5-136		%REC	1	7/13/2008 11:23:45 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: TK #33

Work Order: 0807097

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 0807097-01a msd MSD Batch ID: R29304 Analysis Date: 7/13/2008 12:22:51 PM

Benzene	54.94	µg/L	1.0	71.8	72.4	126	13.8	20	S
Toluene	60.93	µg/L	1.0	93.5	79.2	115	7.13	20	
Surr: 1,2-Dichloroethane-d4	9.489	µg/L	0	94.9	59.3	133	0	0	
Surr: 4-Bromofluorobenzene	9.360	µg/L	0	93.6	80.4	119	0	0	
Surr: Dibromofluoromethane	9.277	µg/L	0	92.8	59.5	134	0	0	
Surr: Toluene-d8	9.784	µg/L	0	97.8	53.5	136	0	0	

Sample ID: b5 MBLK Batch ID: R29304 Analysis Date: 7/13/2008 9:24:56 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	10.29	µg/L	0	103	59.3	133			
Surr: 4-Bromofluorobenzene	10.19	µg/L	0	102	80.4	119			
Surr: Dibromofluoromethane	9.715	µg/L	0	97.2	59.5	134			
Surr: Toluene-d8	9.542	µg/L	0	95.4	53.5	136			

Sample ID: 5mL rb MBLK Batch ID: R29340 Analysis Date: 7/14/2008 7:51:37 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.811	µg/L	0	98.1	59.3	133			
Surr: 4-Bromofluorobenzene	9.751	µg/L	0	97.5	80.4	119			
Surr: Dibromofluoromethane	9.364	µg/L	0	93.6	59.5	134			
Surr: Toluene-d8	9.308	µg/L	0	93.1	53.5	136			

Sample ID: 100ng lcs LCS Batch ID: R29304 Analysis Date: 7/13/2008 10:24:23 AM

Benzene	20.28	µg/L	1.0	101	86.8	120			
Toluene	19.70	µg/L	1.0	98.5	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.489	µg/L	0	94.9	59.3	133			
Surr: 4-Bromofluorobenzene	10.18	µg/L	0	102	80.4	119			
Surr: Dibromofluoromethane	9.292	µg/L	0	92.9	59.5	134			
Surr: Toluene-d8	9.472	µg/L	0	94.7	53.5	136			

Sample ID: 100ng lcs LCS Batch ID: R29340 Analysis Date: 7/14/2008 9:10:37 AM

Benzene	19.16	µg/L	1.0	95.8	86.8	120			
Toluene	20.91	µg/L	1.0	105	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.926	µg/L	0	99.3	59.3	133			
Surr: 4-Bromofluorobenzene	10.16	µg/L	0	102	80.4	119			
Surr: Dibromofluoromethane	9.669	µg/L	0	96.7	59.5	134			
Surr: Toluene-d8	10.06	µg/L	0	101	53.5	136			

Sample ID: 0807097-01a ms MS Batch ID: R29304 Analysis Date: 7/13/2008 11:53:18 AM

Benzene	63.09	µg/L	1.0	113	72.4	126			
Toluene	65.44	µg/L	1.0	116	79.2	115			S

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: TK #33

Work Order: 0807097

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260: Volatiles Short List

Sample ID: 0807097-01a.ms

MS

Batch ID: R29304 Analysis Date: 7/13/2008 11:53:18 AM

Surr: 1,2-Dichloroethane-d4	9.765	µg/L	0	97.6	59.3	133
Surr: 4-Bromofluorobenzene	10.39	µg/L	0	104	80.4	119
Surr: Dibromofluoromethane	9.736	µg/L	0	97.4	59.5	134
Surr: Toluene-d8	10.07	µg/L	0	101	53.5	136

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

7/8/2008

Work Order Number 0807097

Received by: TLS

Checklist completed by:

Signature

*Jamye Shomin*

Date

7/8/08

Sample ID labels checked by:

Initials

*KS*

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

13°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action

A 3x3 grid with a cross pattern of black squares. The squares at (1,1), (1,3), (2,2), (3,1), and (3,3) are black, while the squares at (1,2), (2,1), and (2,3) are white.

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

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

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

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

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

Container Type and #	Preservative Type	HEAL No.
-------------------------	----------------------	----------

Container Type and #	Preservative Type	HEAL No.
-------------------------	----------------------	----------

Container Type and #	Preservative Type	HEAL No.
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Container Type and #	Preservative Type	HEAL No.
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0807097

7/8/28
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If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



## COVER LETTER

Monday, July 28, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX: (505) 632-3911

RE: TK #33 3rd QTR 2008

Order No.: 0807065

Dear Cindy Hurtado:

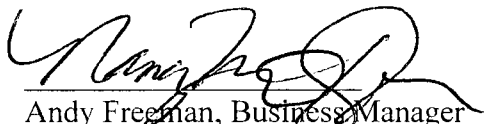
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 7/3/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425

AZ license # AZ0682

ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 28-Jul-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33 3rd QTR 2008  
**Lab Order:** 0807065

**Work Order Sample Summary**

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Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0807065-01A	TK #33	R29247	EPA Method 8260: Volatiles Short List	7/2/2008 7:25:00 AM
0807065-01A	TK #33	R29224	EPA Method 8260: Volatiles Short List	7/2/2008 7:25:00 AM
0807065-01A	TK #33	R29198	EPA Method 8260: Volatiles Short List	7/2/2008 7:25:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 28-Jul-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0807065  
**Project:** TK #33 3rd QTR 2008  
**Lab ID:** 0807065-01

**Client Sample ID:** TK #33  
**Collection Date:** 7/2/2008 7:25:00 AM  
**Date Received:** 7/3/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	4.9	1.0		µg/L	1	7/8/2008 10:16:57 AM
Toluene	5.1	1.0		µg/L	1	7/8/2008 10:16:57 AM
Ethylbenzene	ND	1.0		µg/L	1	7/8/2008 10:16:57 AM
Methyl tert-butyl ether (MTBE)	1.9	1.0		µg/L	1	7/8/2008 10:16:57 AM
Xylenes, Total	55	2.0		µg/L	1	7/8/2008 10:16:57 AM
Surr: 1,2-Dichloroethane-d4	93.8	59.3-133		%REC	1	7/8/2008 10:16:57 AM
Surr: 4-Bromofluorobenzene	90.4	80.4-119		%REC	1	7/8/2008 10:16:57 AM
Surr: Dibromofluoromethane	101	59.5-134		%REC	1	7/8/2008 10:16:57 AM
Surr: Toluene-d8	96.7	53.5-136		%REC	1	7/8/2008 10:16:57 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: TK #33 3rd QTR 2008

Work Order: 080706

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb MBLK Batch ID: R29198 Analysis Date: 7/3/2008 8:26:39 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.188	µg/L	0	91.9	59.3	133			
Surr: 4-Bromofluorobenzene	10.19	µg/L	0	102	80.4	119			
Surr: Dibromofluoromethane	9.424	µg/L	0	94.2	59.5	134			
Surr: Toluene-d8	9.748	µg/L	0	97.5	53.5	136			

Sample ID: 5ml rb MBLK Batch ID: R29224 Analysis Date: 7/7/2008 8:33:06 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.598	µg/L	0	96.0	59.3	133			
Surr: 4-Bromofluorobenzene	9.154	µg/L	0	91.5	80.4	119			
Surr: Dibromofluoromethane	10.24	µg/L	0	102	59.5	134			
Surr: Toluene-d8	9.390	µg/L	0	93.9	53.5	136			

Sample ID: 5ml rb MBLK Batch ID: R29247 Analysis Date: 7/8/2008 8:21:41 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.534	µg/L	0	95.3	59.3	133			
Surr: 4-Bromofluorobenzene	9.246	µg/L	0	92.5	80.4	119			
Surr: Dibromofluoromethane	9.916	µg/L	0	99.2	59.5	134			
Surr: Toluene-d8	9.410	µg/L	0	94.1	53.5	136			

Sample ID: 100ng lcs LCS Batch ID: R29198 Analysis Date: 7/3/2008 9:24:10 AM

Benzene	17.03	µg/L	1.0	85.1	86.8	120			S
Toluene	16.48	µg/L	1.0	82.4	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.426	µg/L	0	94.3	59.3	133			
Surr: 4-Bromofluorobenzene	9.622	µg/L	0	96.2	80.4	119			
Surr: Dibromofluoromethane	9.922	µg/L	0	99.2	59.5	134			
Surr: Toluene-d8	9.482	µg/L	0	94.8	53.5	136			

Sample ID: 100ng lcs LCS Batch ID: R29224 Analysis Date: 7/7/2008 9:30:51 AM

Benzene	18.19	µg/L	1.0	90.9	86.8	120			
Toluene	17.85	µg/L	1.0	89.3	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.816	µg/L	0	98.2	59.3	133			
Surr: 4-Bromofluorobenzene	9.174	µg/L	0	91.7	80.4	119			
Surr: Dibromofluoromethane	9.802	µg/L	0	98.0	59.5	134			
Surr: Toluene-d8	9.766	µg/L	0	97.7	53.5	136			

## Qualifiers:

E Value above quantitation range H Holding times for preparation or analysis exceeded  
 J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit  
 R RPD outside accepted recovery limits S Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: TK #33 3rd QTR 2008

Work Order: 0807065

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260: Volatiles Short List

Sample ID: 100ng lcs

LCS

Batch ID: R29247 Analysis Date: 7/8/2008 9:19:16 AM

Benzene	17.87	µg/L	1.0	89.3	86.8	120			
Toluene	17.38	µg/L	1.0	86.9	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.398	µg/L	0	94.0	59.3	133			
Surr: 4-Bromofluorobenzene	9.892	µg/L	0	98.9	80.4	119			
Surr: Dibromofluoromethane	9.668	µg/L	0	96.7	59.5	134			
Surr: Toluene-d8	9.390	µg/L	0	93.9	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

7/3/2008

Work Order Number 0807065

Received by:

TLS

Checklist completed by:

*[Signature]*  
Signature

7/3/08  
Date

Sample ID labels checked by:

*[Signature]*  
Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Container/Temp Blank temperature?	6°	<6° C Acceptable If given sufficient time to cool.		

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Corrective Action \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



COVER LETTER

Tuesday, July 08, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911  
RE: TK #33

Order No.: 0806426

Dear Cindy Hurtado:

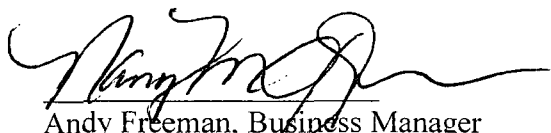
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 6/27/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

  
Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 08-Jul-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33  
**Lab Order:** 0806426

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0806426-01A	TK #33	R29198	EPA Method 8260: Volatiles Short List	6/26/2008 8:45:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 08-Jul-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0806426  
**Project:** TK #33  
**Lab ID:** 0806426-01

**Client Sample ID:** TK #33  
**Collection Date:** 6/26/2008 8:45:00 AM  
**Date Received:** 6/27/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	31	5.0		µg/L	5	7/3/2008 8:35:11 PM
Toluene	17	5.0		µg/L	5	7/3/2008 8:35:11 PM
Ethylbenzene	ND	5.0		µg/L	5	7/3/2008 8:35:11 PM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	7/3/2008 8:35:11 PM
Xylenes, Total	280	10		µg/L	5	7/3/2008 8:35:11 PM
Surr: 1,2-Dichloroethane-d4	94.1	59.3-133		%REC	5	7/3/2008 8:35:11 PM
Surr: 4-Bromofluorobenzene	91.0	80.4-119		%REC	5	7/3/2008 8:35:11 PM
Surr: Dibromofluoromethane	97.1	59.5-134		%REC	5	7/3/2008 8:35:11 PM
Surr: Toluene-d8	97.3	53.5-136		%REC	5	7/3/2008 8:35:11 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: TK #33

Work Order: 0806426

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R29198 Analysis Date: 7/3/2008 8:26:39 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.188	µg/L	0	91.9	59.3	133			
Surr: 4-Bromofluorobenzene	10.19	µg/L	0	102	80.4	119			
Surr: Dibromofluoromethane	9.424	µg/L	0	94.2	59.5	134			
Surr: Toluene-d8	9.748	µg/L	0	97.5	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R29198 Analysis Date: 7/3/2008 9:24:10 AM

Benzene	17.03	µg/L	1.0	85.1	86.8	120			S
Toluene	16.48	µg/L	1.0	82.4	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.426	µg/L	0	94.3	59.3	133			
Surr: 4-Bromofluorobenzene	9.622	µg/L	0	96.2	80.4	119			
Surr: Dibromofluoromethane	9.922	µg/L	0	99.2	59.5	134			
Surr: Toluene-d8	9.482	µg/L	0	94.8	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits



# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

6/27/2008

Work Order Number 0806426

Received by: ARS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	

Container/Temp Blank temperature?

13°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

# Analysis Request

☒ Standard ☐ Rush

Project Name:

TK#MM

Project #:

Project Manager:

**Sampler:**

On Ice: ☒ Yes

**Sample Temperature:**

Date	Time	Sample Request ID
------	------	-------------------

Container

Preservative  
Type

HEAL No. 100

80-26-08	8:45
----------	------

33#3

3-V0A

17H

0806426

1

Date:	Time:
-------	-------

Relinquished by:

6-26-08 9:05



Received by:

Remarks:

Date:	Time:
-------	-------

Relinquished by:

Received by:

[illegible]

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



## COVER LETTER

Thursday, June 19, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33

Order No.: 0806249

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 6/17/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over the printed name.

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 19-Jun-08

**CLIENT:** San Juan Refining  
**Project:** TK #33  
**Lab Order:** 0806249

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0806249-01A	TK #33	R28988	EPA Method 8260: Volatiles Short List	6/16/2008 8:10:00 AM
0806249-01A	TK #33	R28988	EPA Method 8260: Volatiles Short List	6/16/2008 8:10:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 19-Jun-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0806249  
**Project:** TK #33  
**Lab ID:** 0806249-01

**Client Sample ID:** TK #33  
**Collection Date:** 6/16/2008 8:10:00 AM  
**Date Received:** 6/17/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	11	1.0		µg/L	1	6/19/2008 4:22:40 AM
Toluene	5.1	1.0		µg/L	1	6/19/2008 4:22:40 AM
Ethylbenzene	ND	1.0		µg/L	1	6/19/2008 4:22:40 AM
Methyl tert-butyl ether (MTBE)	1.0	1.0		µg/L	1	6/19/2008 4:22:40 AM
Xylenes, Total	140	2.0		µg/L	1	6/19/2008 4:22:40 AM
Surr: 1,2-Dichloroethane-d4	89.3	59.3-133		%REC	1	6/19/2008 4:22:40 AM
Surr: 4-Bromofluorobenzene	82.0	80.4-119		%REC	1	6/19/2008 4:22:40 AM
Surr: Dibromofluoromethane	92.3	59.5-134		%REC	1	6/19/2008 4:22:40 AM
Surr: Toluene-d8	94.7	53.5-136		%REC	1	6/19/2008 4:22:40 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: TK #33

Work Order: 0806249

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb MBLK

Batch ID: R28988 Analysis Date: 6/18/2008 11:18:06 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.722	µg/L	0	97.2	59.3	133			
Surr: 4-Bromofluorobenzene	8.950	µg/L	0	89.5	80.4	119			
Surr: Dibromofluoromethane	9.238	µg/L	0	92.4	59.5	134			
Surr: Toluene-d8	9.648	µg/L	0	96.5	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R28988 Analysis Date: 6/18/2008 1:13:50 PM

Benzene	21.08	µg/L	1.0	105	86.8	120			
Toluene	20.06	µg/L	1.0	100	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.442	µg/L	0	94.4	59.3	133			
Surr: 4-Bromofluorobenzene	9.302	µg/L	0	93.0	80.4	119			
Surr: Dibromofluoromethane	9.268	µg/L	0	92.7	59.5	134			
Surr: Toluene-d8	9.320	µg/L	0	93.2	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

6/17/2008

Work Order Number 0806249

Received by: ARS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

17°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action

Western Refining (Blm fld)


Bloomfield, N.H. 87413

email or Fax#: 505-632-39

☐ Standard ☒ Level 4 (Full Validation)☐ EDD (Type)☒ Standard ☐ Rush

M  
M  
#  
V

Project #:

Sampler: 

On Ice: ☒ Yes ☐ No

Sample Temperature: 17

Container

Type

HEAL No.

K#33

3-V0A

Relinquished by:

Relinquished by: Robert K. Ruben

Relinquished by:

Received by:

Received by:

Remarks:

Received by:

Received by:

Received by:

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH Method 8015B (Gas/Diesel)

TPH (Method 418.1)

EDB (Method 504.1)

EDC (Method 8260)

8310 (PNA or PAH)

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / 8082 PCB's

8260B (VOA) Rtx & MTF only

8270 (Semi-VOA)

---

Air Bubbles (Y or N)

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



COVER LETTER

Monday, July 07, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911  
RE: TK #33

Order No.: 0806141

Dear Cindy Hurtado:

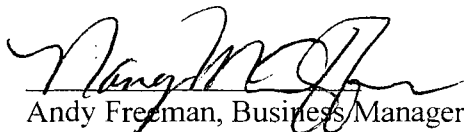
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 6/10/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 07-Jul-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** TK #33  
**Lab Order:** 0806141

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0806141-01A	TK #33	R28959	EPA Method 8260: Volatiles Short List	6/9/2008 12:15:00 PM
0806141-01A	TK #33	R28959	EPA Method 8260: Volatiles Short List	6/9/2008 12:15:00 PM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 07-Jul-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0806141  
**Project:** TK #33  
**Lab ID:** 0806141-01

**Client Sample ID:** TK #33  
**Collection Date:** 6/9/2008 12:15:00 PM  
**Date Received:** 6/10/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	91	5.0		µg/L	5	6/17/2008 9:40:12 AM
Toluene	110	5.0		µg/L	5	6/17/2008 9:40:12 AM
Ethylbenzene	25	5.0		µg/L	5	6/17/2008 9:40:12 AM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	6/17/2008 9:40:12 AM
Xylenes, Total	2100	100		µg/L	50	6/17/2008 9:09:52 AM
Surr: 1,2-Dichloroethane-d4	87.3	59.3-133		%REC	5	6/17/2008 9:40:12 AM
Surr: 4-Bromofluorobenzene	84.4	80.4-119		%REC	50	6/17/2008 9:09:52 AM
Surr: Dibromofluoromethane	89.0	59.5-134		%REC	5	6/17/2008 9:40:12 AM
Surr: Toluene-d8	89.1	53.5-136		%REC	5	6/17/2008 9:40:12 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.

Project: TK #33

Work Order: 080614

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

Method: EPA Method 8260: Volatiles Short List

Sample ID: B6

MBLK

Batch ID: R28959 Analysis Date: 6/17/2008 3:22:31 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	9.326	µg/L	0	93.3	59.3	133			
Surr: 4-Bromofluorobenzene	9.734	µg/L	0	97.3	80.4	119			
Surr: Dibromofluoromethane	9.084	µg/L	0	90.8	59.5	134			
Surr: Toluene-d8	9.242	µg/L	0	92.4	53.5	136			

Sample ID: 100NG LCS

LCS

Batch ID: R28959 Analysis Date: 6/17/2008 4:20:17 AM

Benzene	19.51	µg/L	1.0	97.6	86.8	120			
Toluene	18.65	µg/L	1.0	93.2	64.1	127			
Surr: 1,2-Dichloroethane-d4	9.320	µg/L	0	93.2	59.3	133			
Surr: 4-Bromofluorobenzene	9.330	µg/L	0	93.3	80.4	119			
Surr: Dibromofluoromethane	9.414	µg/L	0	94.1	59.5	134			
Surr: Toluene-d8	9.296	µg/L	0	93.0	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

6/10/2008

Work Order Number 0806141

Received by:

ARS

Checklist completed by:

Signature

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

6°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action

# CHAIN-OF-CUSTODY RECORD

Client: Western Refining (BMSL)

Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

Fax #: 505-632-3911

Date

Time

Matrix

Sample I.D. No.

6-9-08

12:15

H<sub>2</sub>O

TK # 33

Number/Volume

3-VOA

Preservative

HgCl<sub>2</sub>

HNO<sub>3</sub>

4c1

HEAL No.

0806141

1

QA/QC Package:

Std ☐

Level 4 ☒

Other:

Project Name:

TK # 33

Project #:

Project Manager:

Samplers Bab

Sample Temperature:

6°

**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

4901 Hawkins NE, Suite D

Albuquerque, New Mexico 87109

Tel. 505.345.3975 Fax 505.345.4107

www.hallenvironmental.com

## ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)  
BTEX + MTBE + TPH (Gasoline Only)  
TPH Method 8015B (Gas/Diesel)TPH (Method 418.1)  
EDB (Method 504.1)  
EDC (Method 8021)  
8310 (PNA or PAH)  
RCRA 8 Metals  
Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)  
8081 Pesticides / PCB's (8082)  
8260B (VOA) *BTEX + MTBE only*  
8270 (Semi-VOA)

Air Bubbles or Headspace (Y or N)

Remarks:

Date: 6-9-08

Time: 1:15

Relinquished By: (Signature) Robert Braham

Received By: (Signature) [Signature]

Date: 6-10-08

Received By: (Signature) [Signature]

COVER LETTER

Monday, June 16, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: TK #33 - 6-2-08

Order No.: 0806031

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 6/3/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**CLIENT:** San Juan Refining  
**Project:** TK #33 - 6-2-08  
**Lab Order:** 0806031

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0806031-01A	TK #33	R28898	EPA Method 8270C: Semivolatiles	6/2/2008 9:15:00 AM
0806031-01A	TK #33	R28831	EPA Method 8260: Volatiles Short List	6/2/2008 9:15:00 AM
0806031-01A	TK #33	R28808	EPA Method 8260: Volatiles Short List	6/2/2008 9:15:00 AM



**Hall Environmental Analysis Laboratory, Inc.**

Date: 16-Jun-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0806031  
**Project:** TK #33 - 6-2-08  
**Lab ID:** 0806031-01

**Client Sample ID:** TK #33  
**Collection Date:** 6/2/2008 9:15:00 AM  
**Date Received:** 6/3/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	130	5.0		µg/L	5	6/5/2008 1:48:42 PM
Toluene	84	5.0		µg/L	5	6/5/2008 1:48:42 PM
Ethylbenzene	6.8	5.0		µg/L	5	6/5/2008 1:48:42 PM
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	6/5/2008 1:48:42 PM
Xylenes, Total	1100	40		µg/L	20	6/6/2008 12:30:45 PM
Surr: 1,2-Dichloroethane-d4	96.9	59.3-133		%REC	5	6/5/2008 1:48:42 PM
Surr: 4-Bromofluorobenzene	87.4	80.4-119		%REC	20	6/6/2008 12:30:45 PM
Surr: Dibromofluoromethane	95.4	59.5-134		%REC	5	6/5/2008 1:48:42 PM
Surr: Toluene-d8	94.8	53.5-136		%REC	5	6/5/2008 1:48:42 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: TK #33 - 6-2-08

Work Order: 0806031

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb	MBLK			Batch ID: R28808		Analysis Date: 6/5/2008 8:51:14 AM	
Benzene	ND	µg/L	1.0				
Toluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Surr: 1,2-Dichloroethane-d4	9.798	µg/L	0	98.0	59.3	133	
Surr: 4-Bromofluorobenzene	9.460	µg/L	0	94.6	80.4	119	
Surr: Dibromofluoromethane	9.728	µg/L	0	97.3	59.5	134	
Surr: Toluene-d8	9.440	µg/L	0	94.4	53.5	136	

Sample ID: 5ml rb	MBLK			Batch ID: R28831		Analysis Date: 6/6/2008 9:03:50 AM	
Benzene	ND	µg/L	1.0				
Toluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Surr: 1,2-Dichloroethane-d4	9.764	µg/L	0	97.6	59.3	133	
Surr: 4-Bromofluorobenzene	9.430	µg/L	0	94.3	80.4	119	
Surr: Dibromofluoromethane	9.008	µg/L	0	90.1	59.5	134	
Surr: Toluene-d8	9.770	µg/L	0	97.7	53.5	136	

Sample ID: 100ng lcs		LCS			Batch ID: R28808		Analysis Date:	6/5/2008 9:49:23 AM
Benzene	21.45	µg/L	1.0	107	86.8	120		
Toluene	20.45	µg/L	1.0	102	64.1	127		
Surr: 1,2-Dichloroethane-d4	10.09	µg/L	0	101	59.3	133		
Surr: 4-Bromofluorobenzene	8.958	µg/L	0	89.6	80.4	119		
Surr: Dibromofluoromethane	10.11	µg/L	0	101	59.5	134		
Surr: Toluene-d8	9.936	µg/L	0	99.4	53.5	136		

Sample ID: 100ng lcs		LCS			Batch ID: R28831		Analysis Date: 6/6/2008 10:01:38 AM	
Benzene	21.08	µg/L	1.0	105	86.8	120		
Toluene	19.83	µg/L	1.0	99.2	64.1	127		
Surr: 1,2-Dichloroethane-d4	9.672	µg/L	0	96.7	59.3	133		
Surr: 4-Bromofluorobenzene	9.688	µg/L	0	96.9	80.4	119		
Surr: Dibromofluoromethane	9.210	µg/L	0	92.1	59.5	134		
Surr: Toluene-d8	9.520	µg/L	0	95.2	53.5	136		

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

6/3/2008

Work Order Number 0806031

Received by: ARS

Checklist completed by:

Signature

6/3/08  
Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

12°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action



## COVER LETTER

Thursday, June 05, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911  
RE: TK #33 - 5/27/08

Order No.: 0805364

Dear Cindy Hurtado:

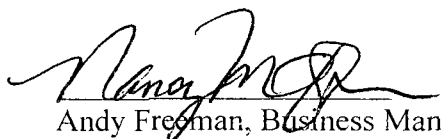
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/28/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 05-Jun-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0805364  
**Project:** TK #33 - 5/27/08  
**Lab ID:** 0805364-01

**Client Sample ID:** TK #33  
**Collection Date:** 5/27/2008 10:40:00 AM  
**Date Received:** 5/28/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	49	10		µg/L	10	6/4/2008 6:05:56 PM
Toluene	21	10		µg/L	10	6/4/2008 6:05:56 PM
Ethylbenzene	ND	10		µg/L	10	6/4/2008 6:05:56 PM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	6/4/2008 6:05:56 PM
Xylenes, Total	790	20		µg/L	10	6/4/2008 6:05:56 PM
Surr: 1,2-Dichloroethane-d4	86.2	59.3-133		%REC	10	6/4/2008 6:05:56 PM
Surr: 4-Bromofluorobenzene	88.0	80.4-119		%REC	10	6/4/2008 6:05:56 PM
Surr: Dibromofluoromethane	85.8	59.5-134		%REC	10	6/4/2008 6:05:56 PM
Surr: Toluene-d8	91.1	53.5-136		%REC	10	6/4/2008 6:05:56 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: TK #33 - 5/27/08

Work Order: 0805364

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

Method: EPA Method 8260: Volatiles Short List

Sample ID: 5mL rb

MBLK

Batch ID: R28797 Analysis Date: 6/4/2008 11:18:37 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	2.0

Sample ID: 100ng lcs

LCS

Batch ID: R28797 Analysis Date: 6/4/2008 12:15:59 PM

Benzene	19.24	µg/L	1.0	96.2	86.8	120
Toluene	18.29	µg/L	1.0	91.4	64.1	127

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

5/28/2008

Work Order Number 0805364

Received by: ARS

Checklist completed by:

Signature

5/28/08  
Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

1°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action:



QA/QC Package.

Std ☒ Level 4 ☐

Other:

Client: Western Refining (Blafld)

Address: #50 CR 4998  
Bloomfield, NM 87413

Phone #: 505-632-4161

Fax #: 505-632-3911

Date	Time	Matrix	Sample I.D. No.
5-22-05	10:40A	H <sub>2</sub> O	TK# 33

Number/Volume	3-60A	X	HNO <sub>3</sub>	HCl	HEAL No. 0805364

Date: 5-27-08	Time: 6pm	Relinquished By: (Signature) <i>Wendy Purdy</i>
Date:	Time:	Relinquished By: (Signature)

Received By: (Signature)	10:00 5/28/08
Received By: (Signature)	

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.345.4107  
[www.hallenvironmental.com](http://www.hallenvironmental.com)

# ANALYSIS REQUEST

	BTEX + MTBE	(8021)	
	BTEX + MTBE + TPH	(Gasoline Only)	
	TPH Method 8015B	(Gas/Diesel)	
	TPH	(Method 418.1)	
	EDB	(Method 504.1)	
	EDC	(Method 802.1)	
	8310	(PNA or PAH)	
	RCA 8 Metals		
	Anions (F <sup>-</sup> , Cl <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , PO <sub>4</sub> <sup>3-</sup> , SO <sub>4</sub> <sup>2-</sup> )		
	8081 Pesticides / PCB's	(8082)	
X	8260B (VOA) BTEX + MTBE only		
	8270	(Semi-VOA)	
	Air Bubbles or Headspace (Y or N)		

Remarks:



## COVER LETTER

Wednesday, May 28, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33

Order No.: 0805281

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/20/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 28-May-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0805281  
**Project:** TK #33  
**Lab ID:** 0805281-01

**Client Sample ID:** TK #33  
**Collection Date:** 5/19/2008 1:20:00 PM  
**Date Received:** 5/20/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	93	5.0		µg/L	5	5/22/2008 3:38:54 PM
Toluene	25	5.0		µg/L	5	5/22/2008 3:38:54 PM
Ethylbenzene	ND	5.0		µg/L	5	5/22/2008 3:38:54 PM
Methyl tert-butyl ether (MTBE)	8.5	5.0		µg/L	5	5/22/2008 3:38:54 PM
Xylenes, Total	970	10		µg/L	5	5/22/2008 3:38:54 PM
Surr: 1,2-Dichloroethane-d4	116	59.3-133		%REC	5	5/22/2008 3:38:54 PM
Surr: 4-Bromofluorobenzene	89.5	80.4-119		%REC	5	5/22/2008 3:38:54 PM
Surr: Dibromofluoromethane	112	59.5-134		%REC	5	5/22/2008 3:38:54 PM
Surr: Toluene-d8	103	53.5-136		%REC	5	5/22/2008 3:38:54 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: TK #33

Work Order: 0805281

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R28652 Analysis Date: 5/22/2008 12:02:35 PM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	2.0

Sample ID: 100 ng lcs

LCS

Batch ID: R28652 Analysis Date: 5/22/2008 1:40:37 PM

Benzene	21.00	µg/L	1.0	105	86.8	120
Toluene	18.36	µg/L	1.0	91.8	64.1	127

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

5/20/2008

Work Order Number 0805281

Received by: TLS

Checklist completed by:

Jamp Snomin  
Signature

5/20/08  
Date

Sample ID labels checked by:

TS  
Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

7°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

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[www.hallenvirronmental.com](http://www.hallenvirronmental.com)

COVER LETTER

Friday, May 23, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33

Order No.: 0805179

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/13/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 23-May-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0805179  
**Project:** TK #33  
**Lab ID:** 0805179-01

**Client Sample ID:** TK #33  
**Collection Date:** 5/12/2008 10:15:00 AM  
**Date Received:** 5/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	100	10		µg/L	10	5/16/2008 9:47:02 PM
Toluene	42	10		µg/L	10	5/16/2008 9:47:02 PM
Ethylbenzene	ND	10		µg/L	10	5/16/2008 9:47:02 PM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	5/16/2008 9:47:02 PM
Xylenes, Total	1100	20		µg/L	10	5/16/2008 9:47:02 PM
Surr: 1,2-Dichloroethane-d4	111	59.3-133		%REC	10	5/16/2008 9:47:02 PM
Surr: 4-Bromofluorobenzene	84.6	80.4-119		%REC	10	5/16/2008 9:47:02 PM
Surr: Dibromofluoromethane	108	59.5-134		%REC	10	5/16/2008 9:47:02 PM
Surr: Toluene-d8	106	53.5-136		%REC	10	5/16/2008 9:47:02 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: TK #33

Work Order: 0805179

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

Method: EPA Method 8260: Volatiles Short List

Sample ID: 5 ml rb

MBLK

Batch ID: R28569 Analysis Date: 5/16/2008 9:15:48 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	2.0

Sample ID: 100 ng lcs

LCS

Batch ID: R28569 Analysis Date: 5/16/2008 10:27:52 AM

Benzene	17.22	µg/L	1.0	86.1	86.8	120	S
Toluene	16.56	µg/L	1.0	79.7	64.1	127	

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

5/13/2008

Work Order Number 0805179

Received by: AT

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Container/Temp Blank temperature?

5°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_



COVER LETTER

Monday, May 12, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33 5-05-08

Order No.: 0805075

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/6/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 12-May-08

**CLIENT:** San Juan Refining  
**Project:** TK #33 5-05-08  
**Lab Order:** 0805075

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0805075-01A	TK#33	R28415	EPA Method 8260: Volatiles Short List	5/5/2008 10:00:00 AM
0805075-01A	TK#33	R28415	EPA Method 8260: Volatiles Short List	5/5/2008 10:00:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 12-May-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0805075  
**Project:** TK #33 5-05-08  
**Lab ID:** 0805075-01

**Client Sample ID:** TK#33  
**Collection Date:** 5/5/2008 10:00:00 AM  
**Date Received:** 5/6/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: JDC
Benzene	160	10		µg/L	10	5/7/2008 10:17:07 AM
Toluene	150	10		µg/L	10	5/7/2008 10:17:07 AM
Ethylbenzene	7.9	1.0		µg/L	1	5/7/2008 10:45:54 AM
Methyl tert-butyl ether (MTBE)	3.6	1.0		µg/L	1	5/7/2008 10:45:54 AM
Xylenes, Total	1600	20		µg/L	10	5/7/2008 10:17:07 AM
Surr: 1,2-Dichloroethane-d4	123	59.3-133		%REC	1	5/7/2008 10:45:54 AM
Surr: 4-Bromofluorobenzene	84.8	80.4-119		%REC	10	5/7/2008 10:17:07 AM
Surr: Dibromofluoromethane	106	59.5-134		%REC	1	5/7/2008 10:45:54 AM
Surr: Toluene-d8	102	53.5-136		%REC	1	5/7/2008 10:45:54 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
 Project: TK #33 5-05-08

Work Order: 0805075

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5mL rb MBLK Batch ID: R28415 Analysis Date: 5/6/2008 11:02:26 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	11.18	µg/L	0	112	59.3	133			
Surr: 4-Bromofluorobenzene	9.500	µg/L	0	95.0	80.4	119			
Surr: Dibromofluoromethane	10.02	µg/L	0	100	59.5	134			
Surr: Toluene-d8	9.938	µg/L	0	99.4	53.5	136			

Sample ID: 100ng lcs LCS Batch ID: R28415 Analysis Date: 5/6/2008 12:00:07 PM

Benzene	20.29	µg/L	1.0	101	86.8	120			
Toluene	17.84	µg/L	1.0	89.2	64.1	127			
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	11.11	µg/L	0	111	59.3	133			
Surr: 4-Bromofluorobenzene	9.878	µg/L	0	98.8	80.4	119			
Surr: Dibromofluoromethane	10.08	µg/L	0	101	59.5	134			
Surr: Toluene-d8	9.634	µg/L	0	96.3	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name - SJR

Date Received:

5/6/2008

Work Order Number 0805075

Received by: ARS

Checklist completed by:

*Jamyc Shomin*  
Signature

*5/16/08*  
Date

Sample ID labels checked by:

*AS*  
Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Container/Temp Blank temperature?

5°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

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

## Analysis Request

Chain-of-Custody Record				Turn-Around Time:
Client: <u>San Juan Refining</u>				<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush
<u>(Western Refining)</u>				Project Name: <u>TL#33-805-00</u>
Address: <u>#50 CR 4990</u>				Project #: _____
<u>Bloomfield</u>				Project Manager: _____
Phone #: <u>505-632-4161</u>				Sampler: <u>Bob</u>
email or Fax #: <u>505-632-3911</u>				On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
QA/QC Package: <input checked="" type="checkbox"/> Level 4 (Full Validation)				Sample Temperature: <u>5</u>
<input type="checkbox"/> Standard <input type="checkbox"/> Other _____				Container Type and #
<input type="checkbox"/> EDD (Type) _____				Preservative Type
Date				HEAL No.
<u>5-5-08 10AM</u>				<u>0805075</u>
<u>TK#33</u>				<u>HC1</u>
Date: _____				Relinquished by: <u>Cinch Hurtado</u>
<u>5-05-08 1pm</u>				<u>940 516 08</u>
Date: _____				Received by: _____
Relinquished by: _____				Received by: _____

COVER LETTER

Monday, May 05, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33

Order No.: 0804342

Dear Cindy Hurtado:

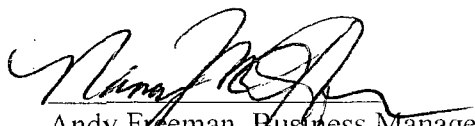
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 4/29/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**CLIENT:** San Juan Refining  
**Project:** TK #33  
**Lab Order:** 0804342

**Work Order Sample Summary**

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Batch ID</b>	<b>Test Name</b>	<b>Collection Date</b>
0804342-01A	TK #33	R28372	EPA Method 8260: Volatiles Short List	4/28/2008 11:20:00 AM
0804342-01A	TK #33	R28372	EPA Method 8260: Volatiles Short List	4/28/2008 11:20:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 05-May-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804342  
**Project:** TK #33  
**Lab ID:** 0804342-01

**Client Sample ID:** TK #33  
**Collection Date:** 4/28/2008 11:20:00 AM  
**Date Received:** 4/29/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: JDC
Benzene	190	10		µg/L	10	5/3/2008 11:53:58 AM
Toluene	170	10		µg/L	10	5/3/2008 11:53:58 AM
Ethylbenzene	6.7	1.0		µg/L	1	5/3/2008 12:23:25 PM
Methyl tert-butyl ether (MTBE)	3.6	1.0		µg/L	1	5/3/2008 12:23:25 PM
Xylenes, Total	1600	20		µg/L	10	5/3/2008 11:53:58 AM
Surr: 1,2-Dichloroethane-d4	115	59.3-133		%REC	1	5/3/2008 12:23:25 PM
Surr: 4-Bromofluorobenzene	93.0	80.4-119		%REC	10	5/3/2008 11:53:58 AM
Surr: Dibromofluoromethane	106	59.5-134		%REC	1	5/3/2008 12:23:25 PM
Surr: Toluene-d8	108	53.5-136		%REC	1	5/3/2008 12:23:25 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: TK #33

Work Order: 0804341

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb 2

MBLK

Batch ID: R28372 Analysis Date: 5/3/2008 10:26:05 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	10.43	µg/L	0	104	59.3	133			
Surr: 4-Bromofluorobenzene	10.09	µg/L	0	101	80.4	119			
Surr: Dibromofluoromethane	9.708	µg/L	0	97.1	59.5	134			
Surr: Toluene-d8	10.32	µg/L	0	103	53.5	136			

Sample ID: 100ng lcs 2

LCS

Batch ID: R28372 Analysis Date: 5/3/2008 10:54:48 AM

Benzene	20.15	µg/L	1.0	101	86.8	120			
Toluene	17.88	µg/L	1.0	89.4	64.1	127			
Surr: 1,2-Dichloroethane-d4	10.56	µg/L	0	106	59.3	133			
Surr: 4-Bromofluorobenzene	10.20	µg/L	0	102	80.4	119			
Surr: Dibromofluoromethane	9.592	µg/L	0	95.9	59.5	134			
Surr: Toluene-d8	9.950	µg/L	0	99.5	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

4/29/2008

Work Order Number 0804342

Received by: ARS

Sample ID labels checked by:

Initials

Checklist completed by:

Signature

Date

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

6°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action





## COVER LETTER

Monday, May 05, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33

Order No.: 0804272

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 4/22/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001





**CLIENT:** San Juan Refining  
**Project:** TK #33  
**Lab Order:** 0804272

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0804272-01A	TK #33	R28341	EPA Method 8260: Volatiles Short List	4/21/2008 10:05:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 05-May-08

CLIENT: San Juan Refining

Client Sample ID: TK #33

Lab Order: 0804272

Collection Date: 4/21/2008 10:05:00 AM

Project: TK #33

Date Received: 4/22/2008

Lab ID: 0804272-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: BDH
Benzene	140	10		µg/L	10	4/30/2008 5:43:11 PM
Toluene	220	10		µg/L	10	4/30/2008 5:43:11 PM
Ethylbenzene	30	10		µg/L	10	4/30/2008 5:43:11 PM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	4/30/2008 5:43:11 PM
Xylenes, Total	1200	20		µg/L	10	4/30/2008 5:43:11 PM
Surr: 1,2-Dichloroethane-d4	108	59.3-133		%REC	10	4/30/2008 5:43:11 PM
Surr: 4-Bromofluorobenzene	83.2	80.4-119		%REC	10	4/30/2008 5:43:11 PM
Surr: Dibromofluoromethane	99.7	59.5-134		%REC	10	4/30/2008 5:43:11 PM
Surr: Toluene-d8	103	53.5-136		%REC	10	4/30/2008 5:43:11 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining

Project: TK #33

Work Order: 0804271

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
---------	--------	-------	-----	------	----------	-----------	------	----------	------

Method: EPA Method 8260: Volatiles Short List

Sample ID: 5mL rb II

MBLK

Batch ID: R28341 Analysis Date: 5/1/2008 3:03:45 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	10.57	µg/L	0	106	59.3	133			
Surr: 4-Bromofluorobenzene	10.48	µg/L	0	105	80.4	119			
Surr: Dibromofluoromethane	9.746	µg/L	0	97.5	59.5	134			
Surr: Toluene-d8	10.16	µg/L	0	102	53.5	136			

Sample ID: 100ng lcs II

LCS

Batch ID: R28341 Analysis Date: 5/1/2008 2:34:35 AM

Benzene	20.74	µg/L	1.0	104	86.8	120			
Toluene	19.50	µg/L	1.0	97.5	64.1	127			
Surr: 1,2-Dichloroethane-d4	10.62	µg/L	0	106	59.3	133			
Surr: 4-Bromofluorobenzene	10.34	µg/L	0	103	80.4	119			
Surr: Dibromofluoromethane	10.29	µg/L	0	103	59.5	134			
Surr: Toluene-d8	10.36	µg/L	0	104	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

4/22/2008

Work Order Number 0804272

Received by: ARS

Checklist completed by:

Signature

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

6°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action

SAN JUAN REFUGING

Address: # 52 Rd 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

QA/QC Package:

☐ Standard☐ Other☐ EDD (Type)☒ Level 4 (Full Validation)☐ Other☐ EDD (Type)

## Sample Request ID

1005A

TK #33

Container

3-V04

Preservative

HCL

HEAL No.

0804272

Date: \_\_\_\_\_

Time:

4-21-08  
Date:

3000

Relinquished by:

Relinquished by: Wendy J. Hutto

Time:

Relinquished by:

Received by:

80/10/17 83:11

Received by:

as before

Remarks:

Remarks:	
----------	--

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

COVER LETTER

Thursday, April 24, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: TK #33

Order No.: 0804185

Dear Cindy Hurtado:


Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 4/16/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**CLIENT:** San Juan Refining  
**Project:** TK #33  
**Lab Order:** 0804185

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0804185-01A	TK #33	R28171	EPA Method 8260: Volatiles Short List	4/15/2008 8:30:00 AM

# Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0804185  
Project: TK #33  
Lab ID: 0804185-01

Client Sample ID: TK #33  
Collection Date: 4/15/2008 8:30:00 AM  
Date Received: 4/16/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	130	10		µg/L	10	4/19/2008 7:23:35 PM
Toluene	200	10		µg/L	10	4/19/2008 7:23:35 PM
Ethylbenzene	23	10		µg/L	10	4/19/2008 7:23:35 PM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	4/19/2008 7:23:35 PM
Xylenes, Total	1100	20		µg/L	10	4/19/2008 7:23:35 PM
Surr: 1,2-Dichloroethane-d4	106	59.3-133		%REC	10	4/19/2008 7:23:35 PM
Surr: 4-Bromofluorobenzene	91.0	80.4-119		%REC	10	4/19/2008 7:23:35 PM
Surr: Dibromofluoromethane	95.7	59.5-134		%REC	10	4/19/2008 7:23:35 PM
Surr: Toluene-d8	100	53.5-136		%REC	10	4/19/2008 7:23:35 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit



## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: TK #33

Work Order: 080418

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R28171 Analysis Date: 4/18/2008 8:27:05 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	10.76	µg/L	0	108	59.3	133			
Surr: 4-Bromofluorobenzene	10.74	µg/L	0	107	80.4	119			
Surr: Dibromofluoromethane	9.752	µg/L	0	97.5	59.5	134			
Surr: Toluene-d8	10.01	µg/L	0	100	53.5	136			

Sample ID: 100ng lcs

LCS

Batch ID: R28171 Analysis Date: 4/18/2008 10:23:16 AM

Benzene	21.25	µg/L	1.0	106	72.4	126			
Toluene	17.22	µg/L	1.0	86.1	69.4	126			
Surr: 1,2-Dichloroethane-d4	10.48	µg/L	0	105	59.3	133			
Surr: 4-Bromofluorobenzene	10.47	µg/L	0	105	80.4	119			
Surr: Dibromofluoromethane	9.984	µg/L	0	99.8	59.5	134			
Surr: Toluene-d8	9.572	µg/L	0	95.7	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

4/16/2008

Work Order Number 0804185

Received by: ARS

Sample ID labels checked by:

Checklist completed by: Ompe Shomin

4-16-08

Initials TS

Signature

Date

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

2°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action



COVER LETTER

Monday, April 14, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: Tank #33

Order No.: 0804121

Dear Cindy Hurtado:

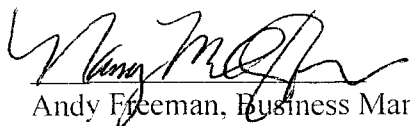
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 4/11/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**CLIENT:** San Juan Refining  
**Project:** Tank #33  
**Lab Order:** 0804121

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0804121-01A	TK #33	R28063	EPA Method 8260: Volatiles Short List	4/10/2008 1:40:00 PM
0804121-01A	TK #33	R28063	EPA Method 8260: Volatiles Short List	4/10/2008 1:40:00 PM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 14-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804121  
**Project:** Tank #33  
**Lab ID:** 0804121-01

**Client Sample ID:** TK #33  
**Collection Date:** 4/10/2008 1:40:00 PM  
**Date Received:** 4/11/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	130	10		µg/L	10	4/11/2008 3:16:18 PM
Toluene	360	10		µg/L	10	4/11/2008 3:16:18 PM
Ethylbenzene	56	10		µg/L	10	4/11/2008 3:16:18 PM
Xylenes, Total	1200	20		µg/L	10	4/11/2008 3:16:18 PM
Surr: 1,2-Dichloroethane-d4	94.5	59.3-133		%REC	10	4/11/2008 3:16:18 PM
Surr: 4-Bromofluorobenzene	94.8	80.4-119		%REC	10	4/11/2008 3:16:18 PM
Surr: Dibromofluoromethane	87.4	59.5-134		%REC	10	4/11/2008 3:16:18 PM
Surr: Toluene-d8	90.5	53.5-136		%REC	10	4/11/2008 3:16:18 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: Tank #33

Work Order: 080412

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5mL rb		MBLK		Batch ID: R28063		Analysis Date: 4/11/2008 9:57:34 AM	
Benzene	ND	µg/L	1.0				
Toluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Surr: 1,2-Dichloroethane-d4	9.549	µg/L	0	95.5	59.3	133	
Surr: 4-Bromofluorobenzene	10.79	µg/L	0	108	80.4	119	
Surr: Dibromofluoromethane	9.189	µg/L	0	91.9	59.5	134	
Surr: Toluene-d8	9.669	µg/L	0	96.7	53.5	136	

Sample ID: 100ng lcs		LCS			Batch ID: R28063		Analysis Date: 4/11/2008 11:27:33 AM	
Benzene	20.38	µg/L	1.0	102	72.4	126		
Toluene	20.39	µg/L	1.0	102	69.4	126		
Surr: 1,2-Dichloroethane-d4	9.773	µg/L	0	97.7	59.3	133		
Surr: 4-Bromofluorobenzene	10.55	µg/L	0	105	80.4	119		
Surr: Dibromofluoromethane	9.171	µg/L	0	91.7	59.5	134		
Surr: Toluene-d8	10.29	µg/L	0	103	53.5	136		

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

4/11/2008

Work Order Number 0804121

Received by: AT

Checklist completed by:

*[Signature]*

Signature

4/11/08

Date

Sample ID labels checked by

TS

Initials

Matrix

Carrier name Greyhound

- |   |   |   |   |
|---|---|---|---|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/>         | No <input type="checkbox"/>             | Not Present <input type="checkbox"/>                                      |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/>         | No <input type="checkbox"/>             | Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/> |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>                    | No <input type="checkbox"/>             | N/A <input checked="" type="checkbox"/>                                   |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/>         | No <input type="checkbox"/>             |   |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/>         | No <input type="checkbox"/>             |   |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/>         | No <input type="checkbox"/>             |   |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/>         | No <input type="checkbox"/>             |   |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/>         | No <input type="checkbox"/>             |   |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/>         | No <input type="checkbox"/>             |   |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/>         | No <input type="checkbox"/>             |   |
| Water - VOA vials have zero headspace?                  | No VOA vials submitted <input type="checkbox"/> | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>   |
| Water - Preservation labels on bottle and cap match?    | Yes <input type="checkbox"/>                    | No <input type="checkbox"/>             | N/A <input checked="" type="checkbox"/>                                   |
| Water - pH acceptable upon receipt?                     | Yes <input type="checkbox"/>                    | No <input type="checkbox"/>             | N/A <input checked="" type="checkbox"/>                                   |

Container/Temp Blank temperature?

1°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_





COVER LETTER

Monday, April 07, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: TK #33 - <sup>15+</sup>~~4th~~ Qtr

Order No.: 0803272

Dear Cindy Hurtado:

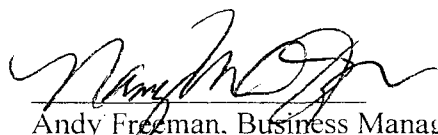
Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 3/27/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



# Hall Environmental Analysis Laboratory, Inc.

Date: 07-Apr-08

CLIENT: San Juan Refining

Project: TK #33 - 4th Qtr

Lab Order: 0803272

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0803272-01A	TK #33	R27912	EPA Method 8260: Volatiles Short List	3/24/2008 9:45:00 AM

**Hall Environmental Analysis Laboratory, Inc.**

Date: 07-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0803272  
**Project:** TK #33 - 4th Qtr  
**Lab ID:** 0803272-01

**Client Sample ID:** TK #33  
**Collection Date:** 3/24/2008 9:45:00 AM  
**Date Received:** 3/27/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	760	50		µg/L	50	3/29/2008 6:13:33 PM
Toluene	1600	50		µg/L	50	3/29/2008 6:13:33 PM
Ethylbenzene	170	50		µg/L	50	3/29/2008 6:13:33 PM
Methyl tert-butyl ether (MTBE)	ND	50		µg/L	50	3/29/2008 6:13:33 PM
Xylenes, Total	4700	100		µg/L	50	3/29/2008 6:13:33 PM
Surr: 1,2-Dichloroethane-d4	99.2	59.3-133		%REC	50	3/29/2008 6:13:33 PM
Surr: 4-Bromofluorobenzene	100	80.4-119		%REC	50	3/29/2008 6:13:33 PM
Surr: Dibromofluoromethane	103	59.5-134		%REC	50	3/29/2008 6:13:33 PM
Surr: Toluene-d8	104	53.5-136		%REC	50	3/29/2008 6:13:33 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: TK #33 - 4th Qtr

Work Order: 0803272

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 5mL rb-b

MBLK

Batch ID: R27912 Analysis Date: 3/29/2008 4:02:18 AM

Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	10.14	µg/L	0	101	59.3	133			
Surr: 4-Bromofluorobenzene	10.35	µg/L	0	103	80.4	119			
Surr: Dibromofluoromethane	9.719	µg/L	0	97.2	59.5	134			
Surr: Toluene-d8	10.06	µg/L	0	101	53.5	136			

Sample ID: 100ng lcs-b

LCS

Batch ID: R27912 Analysis Date: 3/29/2008 3:27:08 AM

Benzene	20.14	µg/L	1.0	101	72.4	126			
Toluene	20.20	µg/L	1.0	101	69.4	126			
Surr: 1,2-Dichloroethane-d4	9.715	µg/L	0	97.1	59.3	133			
Surr: 4-Bromofluorobenzene	10.62	µg/L	0	106	80.4	119			
Surr: Dibromofluoromethane	9.728	µg/L	0	97.3	59.5	134			
Surr: Toluene-d8	10.35	µg/L	0	104	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

3/27/2008

Work Order Number 0803272

Received by: TLS

Checklist completed by:

Signature

Sample ID labels checked by:

Initials

3/27/08  
Date

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	

Container/Temp Blank temperature?

4°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_





## COVER LETTER

Thursday, April 24, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161  
FAX (505) 632-3911

RE: North Barrier Wall Semi-Annual-2008

Order No.: 0804082

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 12 sample(s) on 4/8/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,

Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109  
505.345.3975 ■ Fax 505.345.4107  
[www.hallenvironmental.com](http://www.hallenvironmental.com)



**CLIENT:** San Juan Refining  
**Project:** North Barrier Wall Semi-Annual-2008  
**Lab Order:** 0804082

**CASE NARRATIVE**

Analytical Comments for METHOD 8015DRO\_W, SAMPLE 0804082-09A: DNOP not recovered due to dilution

**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

**CLIENT:** San Juan Refining  
**Project:** North Barrier Wall Semi-Annual-2008  
**Lab Order:** 0804082

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0804082-01A	CW 25+95	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 11:25:00 AM
0804082-01A	CW 25+95	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 11:25:00 AM
0804082-01A	CW 25+95	15598	EPA Method 8015B: Diesel Range	4/7/2008 11:25:00 AM
0804082-02A	OW 25+70	15598	EPA Method 8015B: Diesel Range	4/7/2008 11:40:00 AM
0804082-02A	OW 25+70	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 11:40:00 AM
0804082-02A	OW 25+70	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 11:40:00 AM
0804082-03A	OW 23+10	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 11:55:00 AM
0804082-03A	OW 23+10	15598	EPA Method 8015B: Diesel Range	4/7/2008 11:55:00 AM
0804082-03A	OW 23+10	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 11:55:00 AM
0804082-04A	OW 22+00	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 1:15:00 PM
0804082-04A	OW 22+00	15598	EPA Method 8015B: Diesel Range	4/7/2008 1:15:00 PM
0804082-04A	OW 22+00	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 1:15:00 PM
0804082-05A	OW 19+50	15598	EPA Method 8015B: Diesel Range	4/7/2008 1:30:00 PM
0804082-05A	OW 19+50	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 1:30:00 PM
0804082-05A	OW 19+50	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 1:30:00 PM
0804082-06A	OW 16+60	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 1:45:00 PM
0804082-06A	OW 16+60	15598	EPA Method 8015B: Diesel Range	4/7/2008 1:45:00 PM
0804082-06A	OW 16+60	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 1:45:00 PM
0804082-07A	OW 16+60 FD	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 1:55:00 PM
0804082-07A	OW 16+60 FD	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 1:55:00 PM
0804082-07A	OW 16+60 FD	15598	EPA Method 8015B: Diesel Range	4/7/2008 1:55:00 PM
0804082-08A	CW 0+60	15598	EPA Method 8015B: Diesel Range	4/7/2008 2:15:00 PM
0804082-08A	CW 0+60	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 2:15:00 PM
0804082-08A	CW 0+60	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 2:15:00 PM
0804082-09A	OW 0+60	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 2:25:00 PM
0804082-09A	OW 0+60	15598	EPA Method 8015B: Diesel Range	4/7/2008 2:25:00 PM
0804082-09A	OW 0+60	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 2:25:00 PM
0804082-09A	OW 0+60	15598	EPA Method 8015B: Diesel Range	4/7/2008 2:25:00 PM
0804082-10A	OW 23+90	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 2:50:00 PM
0804082-10A	OW 23+90	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 2:50:00 PM
0804082-10A	OW 23+90	15598	EPA Method 8015B: Diesel Range	4/7/2008 2:50:00 PM
0804082-11A	Field Blank	15598	EPA Method 8015B: Diesel Range	4/7/2008 3:00:00 PM
0804082-11A	Field Blank	R28104	EPA Method 8015B: Gasoline Range	4/7/2008 3:00:00 PM
0804082-11A	Field Blank	R28141	EPA Method 8260: Volatiles Short List	4/7/2008 3:00:00 PM
0804082-12A	Trip Blank	R28141	EPA Method 8260: Volatiles Short List	
0804082-12A	Trip Blank	R28104	EPA Method 8015B: Gasoline Range	

# Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

**CLIENT:** San Juan Refining **Client Sample ID:** CW 25+95  
**Lab Order:** 0804082 **Collection Date:** 4/7/2008 11:25:00 AM  
**Project:** North Barrier Wall Semi-Annual-2008 **Date Received:** 4/8/2008  
**Lab ID:** 0804082-01 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/9/2008 9:20:53 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/9/2008 9:20:53 PM
Surr: DNOP	118	58-140		%REC	1	4/9/2008 9:20:53 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	2.0	0.050		mg/L	1	4/15/2008 1:44:44 PM
Surr: BFB	113	79.2-121		%REC	1	4/15/2008 1:44:44 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	43	2.0		µg/L	2	4/17/2008 11:06:44 AM
Toluene	85	2.0		µg/L	2	4/17/2008 11:06:44 AM
Ethylbenzene	13	2.0		µg/L	2	4/17/2008 11:06:44 AM
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	4/17/2008 11:06:44 AM
Xylenes, Total	110	6.0		µg/L	2	4/17/2008 11:06:44 AM
Surr: 1,2-Dichloroethane-d4	106	59.3-133		%REC	2	4/17/2008 11:06:44 AM
Surr: 4-Bromofluorobenzene	97.2	80.4-119		%REC	2	4/17/2008 11:06:44 AM
Surr: Dibromofluoromethane	102	59.5-134		%REC	2	4/17/2008 11:06:44 AM
Surr: Toluene-d8	97.5	53.5-136		%REC	2	4/17/2008 11:06:44 AM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
 B Analyte detected in the associated Method Blank  
 E Value above quantitation range  
 H Holding times for preparation or analysis exceeded  
 J Analyte detected below quantitation limits  
 MCL Maximum Contaminant Level  
 ND Not Detected at the Reporting Limit  
 RL Reporting Limit  
 S Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

<b>CLIENT:</b>	San Juan Refining	<b>Client Sample ID:</b>	OW 25+70
<b>Lab Order:</b>	0804082	<b>Collection Date:</b>	4/7/2008 11:40:00 AM
<b>Project:</b>	North Barrier Wall Semi-Annual-2008	<b>Date Received:</b>	4/8/2008
<b>Lab ID:</b>	0804082-02	<b>Matrix:</b>	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/9/2008 9:54:46 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/9/2008 9:54:46 PM
Surr: DNOP	122	58-140		%REC	1	4/9/2008 9:54:46 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	0.14	0.050		mg/L	1	4/15/2008 2:14:42 PM
Surr: BFB	102	79.2-121		%REC	1	4/15/2008 2:14:42 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	2.7	1.0		µg/L	1	4/17/2008 11:35:49 AM
Toluene	2.6	1.0		µg/L	1	4/17/2008 11:35:49 AM
Ethylbenzene	ND	1.0		µg/L	1	4/17/2008 11:35:49 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/17/2008 11:35:49 AM
Xylenes, Total	ND	3.0		µg/L	1	4/17/2008 11:35:49 AM
Surr: 1,2-Dichloroethane-d4	108	59.3-133		%REC	1	4/17/2008 11:35:49 AM
Surr: 4-Bromofluorobenzene	96.7	80.4-119		%REC	1	4/17/2008 11:35:49 AM
Surr: Dibromofluoromethane	98.4	59.5-134		%REC	1	4/17/2008 11:35:49 AM
Surr: Toluene-d8	96.3	53.5-136		%REC	1	4/17/2008 11:35:49 AM

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804082  
**Project:** North Barrier Wall Semi-Annual-2008  
**Lab ID:** 0804082-03

**Client Sample ID:** OW 23+10  
**Collection Date:** 4/7/2008 11:55:00 AM  
**Date Received:** 4/8/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	11	1.0		mg/L	1	4/9/2008 10:28:32 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/9/2008 10:28:32 PM
Surr: DNOP	116	58-140		%REC	1	4/9/2008 10:28:32 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	0.94	0.25		mg/L	5	4/15/2008 2:47:26 PM
Surr: BFB	124	79.2-121	S	%REC	5	4/15/2008 2:47:26 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/17/2008 12:05:02 PM
Toluene	ND	1.0		µg/L	1	4/17/2008 12:05:02 PM
Ethylbenzene	ND	1.0		µg/L	1	4/17/2008 12:05:02 PM
Methyl tert-butyl ether (MTBE)	25	1.0		µg/L	1	4/17/2008 12:05:02 PM
Xylenes, Total	ND	3.0		µg/L	1	4/17/2008 12:05:02 PM
Surr: 1,2-Dichloroethane-d4	103	59.3-133		%REC	1	4/17/2008 12:05:02 PM
Surr: 4-Bromofluorobenzene	98.6	80.4-119		%REC	1	4/17/2008 12:05:02 PM
Surr: Dibromofluoromethane	104	59.5-134		%REC	1	4/17/2008 12:05:02 PM
Surr: Toluene-d8	93.7	53.5-136		%REC	1	4/17/2008 12:05:02 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

CLIENT: San Juan Refining

Client Sample ID: OW 22+00

Lab Order: 0804082

Collection Date: 4/7/2008 1:15:00 PM

Project: North Barrier Wall Semi-Annual-2008

Date Received: 4/8/2008

Lab ID: 0804082-04

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	5.4	1.0		mg/L	1	4/9/2008 11:02:21 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/9/2008 11:02:21 PM
Surr: DNOP	122	58-140		%REC	1	4/9/2008 11:02:21 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	0.51	0.25		mg/L	5	4/15/2008 3:20:07 PM
Surr: BFB	106	79.2-121		%REC	5	4/15/2008 3:20:07 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	10		µg/L	10	4/17/2008 12:35:26 PM
Toluene	ND	10		µg/L	10	4/17/2008 12:35:26 PM
Ethylbenzene	ND	10		µg/L	10	4/17/2008 12:35:26 PM
Methyl tert-butyl ether (MTBE)	1200	10		µg/L	10	4/17/2008 12:35:26 PM
Xylenes, Total	ND	30		µg/L	10	4/17/2008 12:35:26 PM
Surr: 1,2-Dichloroethane-d4	104	59.3-133		%REC	10	4/17/2008 12:35:26 PM
Surr: 4-Bromofluorobenzene	102	80.4-119		%REC	10	4/17/2008 12:35:26 PM
Surr: Dibromofluoromethane	102	59.5-134		%REC	10	4/17/2008 12:35:26 PM
Surr: Toluene-d8	102	53.5-136		%REC	10	4/17/2008 12:35:26 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

**CLIENT:** San Juan Refining **Client Sample ID:** OW 19+50  
**Lab Order:** 0804082 **Collection Date:** 4/7/2008 1:30:00 PM  
**Project:** North Barrier Wall Semi-Annual-2008 **Date Received:** 4/8/2008  
**Lab ID:** 0804082-05 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	8.8	1.0		mg/L	1	4/9/2008 11:36:26 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/9/2008 11:36:26 PM
Surr: DNOP	115	58-140		%REC	1	4/9/2008 11:36:26 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.25		mg/L	5	4/15/2008 3:52:44 PM
Surr: BFB	104	79.2-121		%REC	5	4/15/2008 3:52:44 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	2.0		µg/L	2	4/17/2008 1:05:52 PM
Toluene	ND	2.0		µg/L	2	4/17/2008 1:05:52 PM
Ethylbenzene	ND	2.0		µg/L	2	4/17/2008 1:05:52 PM
Methyl tert-butyl ether (MTBE)	140	2.0		µg/L	2	4/17/2008 1:05:52 PM
Xylenes, Total	ND	6.0		µg/L	2	4/17/2008 1:05:52 PM
Surr: 1,2-Dichloroethane-d4	107	59.3-133		%REC	2	4/17/2008 1:05:52 PM
Surr: 4-Bromofluorobenzene	101	80.4-119		%REC	2	4/17/2008 1:05:52 PM
Surr: Dibromofluoromethane	98.2	59.5-134		%REC	2	4/17/2008 1:05:52 PM
Surr: Toluene-d8	101	53.5-136		%REC	2	4/17/2008 1:05:52 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits  
 B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804082  
**Project:** North Barrier Wall Semi-Annual-2008  
**Lab ID:** 0804082-06

**Client Sample ID:** OW 16+60  
**Collection Date:** 4/7/2008 1:45:00 PM  
**Date Received:** 4/8/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	34	1.0		mg/L	1	4/10/2008 12:10:30 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/10/2008 12:10:30 AM
Surr: DNOP	118	58-140		%REC	1	4/10/2008 12:10:30 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	21	1.0		mg/L	20	4/15/2008 4:25:36 PM
Surr: BFB	112	79.2-121		%REC	20	4/15/2008 4:25:36 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	2300	50		µg/L	50	4/17/2008 1:36:17 PM
Toluene	ND	50		µg/L	50	4/17/2008 1:36:17 PM
Ethylbenzene	1400	50		µg/L	50	4/17/2008 1:36:17 PM
Methyl tert-butyl ether (MTBE)	4500	50		µg/L	50	4/17/2008 1:36:17 PM
Xylenes, Total	1300	150		µg/L	50	4/17/2008 1:36:17 PM
Surr: 1,2-Dichloroethane-d4	107	59.3-133		%REC	50	4/17/2008 1:36:17 PM
Surr: 4-Bromofluorobenzene	103	80.4-119		%REC	50	4/17/2008 1:36:17 PM
Surr: Dibromofluoromethane	100	59.5-134		%REC	50	4/17/2008 1:36:17 PM
Surr: Toluene-d8	97.0	53.5-136		%REC	50	4/17/2008 1:36:17 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804082  
**Project:** North Barrier Wall Semi-Annual-2008  
**Lab ID:** 0804082-07

**Client Sample ID:** OW 16+60 FD  
**Collection Date:** 4/7/2008 1:55:00 PM  
**Date Received:** 4/8/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	40	1.0		mg/L	1	4/10/2008 12:44:38 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/10/2008 12:44:38 AM
Surr: DNOP	135	58-140		%REC	1	4/10/2008 12:44:38 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	22	1.0		mg/L	20	4/15/2008 5:30:56 PM
Surr: BFB	124	79.2-121	S	%REC	20	4/15/2008 5:30:56 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	2500	50		µg/L	50	4/17/2008 2:06:49 PM
Toluene	ND	50		µg/L	50	4/17/2008 2:06:49 PM
Ethylbenzene	1400	50		µg/L	50	4/17/2008 2:06:49 PM
Methyl tert-butyl ether (MTBE)	4800	50		µg/L	50	4/17/2008 2:06:49 PM
Xylenes, Total	1400	150		µg/L	50	4/17/2008 2:06:49 PM
Surr: 1,2-Dichloroethane-d4	106	59.3-133		%REC	50	4/17/2008 2:06:49 PM
Surr: 4-Bromofluorobenzene	95.6	80.4-119		%REC	50	4/17/2008 2:06:49 PM
Surr: Dibromofluoromethane	101	59.5-134		%REC	50	4/17/2008 2:06:49 PM
Surr: Toluene-d8	93.5	53.5-136		%REC	50	4/17/2008 2:06:49 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0804082  
Project: North Barrier Wall Semi-Annual-2008  
Lab ID: 0804082-08

Client Sample ID: CW 0+60  
Collection Date: 4/7/2008 2:15:00 PM  
Date Received: 4/8/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	5.3	1.0		mg/L	1	4/10/2008 1:18:43 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/10/2008 1:18:43 AM
Surr: DNOP	101	58-140		%REC	1	4/10/2008 1:18:43 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	6.6	0.25		mg/L	5	4/15/2008 6:36:26 PM
Surr: BFB	103	79.2-121		%REC	5	4/15/2008 6:36:26 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	180	5.0		µg/L	5	4/17/2008 2:37:25 PM
Toluene	ND	5.0		µg/L	5	4/17/2008 2:37:25 PM
Ethylbenzene	49	5.0		µg/L	5	4/17/2008 2:37:25 PM
Methyl tert-butyl ether (MTBE)	52	5.0		µg/L	5	4/17/2008 2:37:25 PM
Xylenes, Total	26	15		µg/L	5	4/17/2008 2:37:25 PM
Surr: 1,2-Dichloroethane-d4	105	59.3-133		%REC	5	4/17/2008 2:37:25 PM
Surr: 4-Bromofluorobenzene	107	80.4-119		%REC	5	4/17/2008 2:37:25 PM
Surr: Dibromofluoromethane	107	59.5-134		%REC	5	4/17/2008 2:37:25 PM
Surr: Toluene-d8	102	53.5-136		%REC	5	4/17/2008 2:37:25 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 24-Apr-08

CLIENT: San Juan Refining  
Lab Order: 0804082  
Project: North Barrier Wall Semi-Annual-2008  
Lab ID: 0804082-09

Client Sample ID: OW 0+60  
Collection Date: 4/7/2008 2:25:00 PM  
Date Received: 4/8/2008  
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	360	5.0		mg/L	5	4/21/2008 8:21:37 PM
Motor Oil Range Organics (MRO)	ND	25		mg/L	5	4/21/2008 8:21:37 PM
Surr: DNOP	185	58-140	S	%REC	5	4/21/2008 8:21:37 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	6.7	2.5		mg/L	50	4/15/2008 7:09:09 PM
Surr: BFB	114	79.2-121		%REC	50	4/15/2008 7:09:09 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	10		µg/L	10	4/17/2008 3:08:00 PM
Toluene	ND	10		µg/L	10	4/17/2008 3:08:00 PM
Ethylbenzene	18	10		µg/L	10	4/17/2008 3:08:00 PM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	4/17/2008 3:08:00 PM
Xylenes, Total	48	30		µg/L	10	4/17/2008 3:08:00 PM
Surr: 1,2-Dichloroethane-d4	106	59.3-133		%REC	10	4/17/2008 3:08:00 PM
Surr: 4-Bromofluorobenzene	95.5	80.4-119		%REC	10	4/17/2008 3:08:00 PM
Surr: Dibromofluoromethane	95.8	59.5-134		%REC	10	4/17/2008 3:08:00 PM
Surr: Toluene-d8	96.7	53.5-136		%REC	10	4/17/2008 3:08:00 PM

Qualifiers: \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804082  
**Project:** North Barrier Wall Semi-Annual-2008  
**Lab ID:** 0804082-10

**Client Sample ID:** OW 23+90  
**Collection Date:** 4/7/2008 2:50:00 PM  
**Date Received:** 4/8/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/10/2008 2:26:37 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/10/2008 2:26:37 AM
Surr: DNOP	107	58-140		%REC	1	4/10/2008 2:26:37 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 8:39:36 PM
Surr: BFB	102	79.2-121		%REC	1	4/15/2008 8:39:36 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/17/2008 3:53:08 PM
Toluene	ND	1.0		µg/L	1	4/17/2008 3:53:08 PM
Ethylbenzene	ND	1.0		µg/L	1	4/17/2008 3:53:08 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/17/2008 3:53:08 PM
Xylenes, Total	ND	3.0		µg/L	1	4/17/2008 3:53:08 PM
Surr: 1,2-Dichloroethane-d4	111	59.3-133		%REC	1	4/17/2008 3:53:08 PM
Surr: 4-Bromofluorobenzene	98.4	80.4-119		%REC	1	4/17/2008 3:53:08 PM
Surr: Dibromofluoromethane	103	59.5-134		%REC	1	4/17/2008 3:53:08 PM
Surr: Toluene-d8	98.5	53.5-136		%REC	1	4/17/2008 3:53:08 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804082  
**Project:** North Barrier Wall Semi-Annual-2008  
**Lab ID:** 0804082-11

**Client Sample ID:** Field Blank  
**Collection Date:** 4/7/2008 3:00:00 PM  
**Date Received:** 4/8/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/10/2008 3:34:45 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/10/2008 3:34:45 AM
Surr: DNOP	101	58-140		%REC	1	4/10/2008 3:34:45 AM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 11:35:24 AM
Surr: BFB	103	79.2-121		%REC	1	4/15/2008 11:35:24 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/17/2008 4:21:55 PM
Toluene	ND	1.0		µg/L	1	4/17/2008 4:21:55 PM
Ethylbenzene	ND	1.0		µg/L	1	4/17/2008 4:21:55 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/17/2008 4:21:55 PM
Xylenes, Total	ND	3.0		µg/L	1	4/17/2008 4:21:55 PM
Surr: 1,2-Dichloroethane-d4	108	59.3-133		%REC	1	4/17/2008 4:21:55 PM
Surr: 4-Bromofluorobenzene	94.0	80.4-119		%REC	1	4/17/2008 4:21:55 PM
Surr: Dibromofluoromethane	96.7	59.5-134		%REC	1	4/17/2008 4:21:55 PM
Surr: Toluene-d8	99.0	53.5-136		%REC	1	4/17/2008 4:21:55 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 24-Apr-08

**CLIENT:** San Juan Refining  
**Lab Order:** 0804082  
**Project:** North Barrier Wall Semi-Annual-2008  
**Lab ID:** 0804082-12

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Date Received:** 4/8/2008  
**Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/15/2008 12:05:33 PM
Surr: BFB	99.8	79.2-121		%REC	1	4/15/2008 12:05:33 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: BDH
Benzene	ND	1.0		µg/L	1	4/17/2008 4:50:41 PM
Toluene	ND	1.0		µg/L	1	4/17/2008 4:50:41 PM
Ethylbenzene	ND	1.0		µg/L	1	4/17/2008 4:50:41 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/17/2008 4:50:41 PM
Xylenes, Total	ND	3.0		µg/L	1	4/17/2008 4:50:41 PM
Surr: 1,2-Dichloroethane-d4	108	59.3-133		%REC	1	4/17/2008 4:50:41 PM
Surr: 4-Bromofluorobenzene	107	80.4-119		%REC	1	4/17/2008 4:50:41 PM
Surr: Dibromofluoromethane	101	59.5-134		%REC	1	4/17/2008 4:50:41 PM
Surr: Toluene-d8	102	53.5-136		%REC	1	4/17/2008 4:50:41 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: North Barrier Wall Semi-Annual-2008

Work Order: 0804082

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 8015B: Diesel Range</b>									
Sample ID: MB-15598		MBLK			Batch ID: 15598		Analysis Date: 4/9/2008 6:31:40 PM		
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Surr: DNOP	1.164	mg/L	0	116	58	140			
Sample ID: LCS-15598		LCS			Batch ID: 15598		Analysis Date: 4/9/2008 7:05:50 PM		
Diesel Range Organics (DRO)	4.932	mg/L	1.0	98.6	74	157			
Surr: DNOP	0.5510	mg/L	0	110	58	140			
Sample ID: LCSD-15598		LCSD			Batch ID: 15598		Analysis Date: 4/9/2008 7:39:36 PM		
Diesel Range Organics (DRO)	5.511	mg/L	1.0	110	74	157	11.1	23	
Surr: DNOP	0.5927	mg/L	0	119	58	140	0	0	

<b>Method: EPA Method 8015B: Gasoline Range</b>									
Sample ID: 5ML RB		MBLK			Batch ID: R28104		Analysis Date: 4/15/2008 9:04:21 AM		
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	20.57	mg/L	0	103	79.2	121			
Sample ID: 2.5UG GRO LCS		LCS			Batch ID: R28104		Analysis Date: 4/16/2008 12:10:23 AM		
Gasoline Range Organics (GRO)	0.4920	mg/L	0.050	98.4	80	115			
Surr: BFB	20.81	mg/L	0	104	79.2	121			

<b>Method: EPA Method 8260: Volatiles Short List</b>									
Sample ID: 5mL		MBLK			Batch ID: R28141		Analysis Date: 4/17/2008 9:09:26 AM		
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 1,2-Dichloroethane-d4	10.86	µg/L	0	109	59.3	133			
Surr: 4-Bromofluorobenzene	9.936	µg/L	0	99.4	80.4	119			
Surr: Dibromofluoromethane	10.04	µg/L	0	100	59.5	134			
Surr: Toluene-d8	9.856	µg/L	0	98.6	53.5	136			
Sample ID: 100ng lcs		LCS			Batch ID: R28141		Analysis Date: 4/17/2008 10:07:16 AM		
Benzene	21.41	µg/L	1.0	107	72.4	126			
Toluene	17.68	µg/L	1.0	88.4	69.4	126			
Surr: 1,2-Dichloroethane-d4	10.92	µg/L	0	109	59.3	133			
Surr: 4-Bromofluorobenzene	10.06	µg/L	0	101	80.4	119			
Surr: Dibromofluoromethane	10.62	µg/L	0	106	59.5	134			
Surr: Toluene-d8	9.868	µg/L	0	98.7	53.5	136			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name SJR

Date Received:

4/8/2008

Work Order Number 0804082

Received by: TLS

Checklist completed by:

Signature

4/8/08

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

5°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

C.H. AS 4/8

Correct ID on sample 0804082-5 in OW19+50 as per

Corrective Action



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

4901 Hawkins NE, Suite D  
Albuquerque, New Mexico 87109  
Tel. 505.345.3975 Fax 505.345.4  
[www.hallenvironmental.com](http://www.hallenvironmental.com)

Project Name: North Barrier Wall  
Semi-Annual - 2008

Project #:

Project Manager:

Sample: Andy Nurtado / Bob Kakow  
Sample Temperature: 5.

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative		HEAL No.
					HgCl <sub>2</sub>	HNO <sub>3</sub>	
10/07/08	1125A	H <sub>2</sub> O	CW 25+95	5-VOL			0804082
	1140AM		OW 25+70			X	1
	1155AM		OW 23+10			X	2
	1158AM		OW 22+00			X	3
	1159AM		OW 19+20			X	4
	1159AM		OW 16+60			X	5
	1159AM		OW 16+60 FD			X	6
	1159P		CW 0+60			X	7
	1215P		OW 0+60			X	8
	1225P		OW 23+90	5-VOL		X	9
	1250P		Field Blank	3-VOL		X	10
	1300P		Trip Blank			X	11
							12

Date: 10/7/08	Time: 330pm	Relinquished By: (Signature) <i>Wendy L. Luntado</i>	Received By: (Signature) <i>Greg S.</i>	4/18/08
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

# ANALYSIS REQUEST

[illegible]

Remarks:

## COVER LETTER

Thursday, September 04, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: Observation Wells Semi-Annual Aug 2008

Order No.: 0808213

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 13 sample(s) on 8/13/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425

AZ license # AZ0682

ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab Order:** 0808213

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808213-01A	OW-0+60	16767	EPA Method 8015B: Diesel Range	8/12/2008 10:30:00 AM
0808213-01A	OW-0+60	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 10:30:00 AM
0808213-01A	OW-0+60	R29896	EPA Method 8015B: Gasoline Range	8/12/2008 10:30:00 AM
0808213-01A	OW-0+60	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 10:30:00 AM
0808213-02A	OW-3+85	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 9:55:00 AM
0808213-02A	OW-3+85	16767	EPA Method 8015B: Diesel Range	8/12/2008 9:55:00 AM
0808213-02A	OW-3+85	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 9:55:00 AM
0808213-02A	OW-3+85	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 9:55:00 AM
0808213-02A	OW-3+85	R29896	EPA Method 8015B: Gasoline Range	8/12/2008 9:55:00 AM
0808213-03A	OW-16+60	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 9:35:00 AM
0808213-03A	OW-16+60	R29896	EPA Method 8015B: Gasoline Range	8/12/2008 9:35:00 AM
0808213-03A	OW-16+60	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 9:35:00 AM
0808213-03A	OW-16+60	16767	EPA Method 8015B: Diesel Range	8/12/2008 9:35:00 AM
0808213-03A	OW-16+60	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 9:35:00 AM
0808213-03A	OW-16+60	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 9:35:00 AM
0808213-04A	OW-16+60 Dup	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 9:40:00 AM
0808213-04A	OW-16+60 Dup	16767	EPA Method 8015B: Diesel Range	8/12/2008 9:40:00 AM
0808213-04A	OW-16+60 Dup	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 9:40:00 AM
0808213-04A	OW-16+60 Dup	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 9:40:00 AM
0808213-04A	OW-16+60 Dup	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 9:40:00 AM
0808213-04A	OW-16+60 Dup	R29896	EPA Method 8015B: Gasoline Range	8/12/2008 9:40:00 AM
0808213-05A	OW-22+00	R29896	EPA Method 8015B: Gasoline Range	8/12/2008 9:20:00 AM
0808213-05A	OW-22+00	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 9:20:00 AM
0808213-05A	OW-22+00	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 9:20:00 AM
0808213-05A	OW-22+00	16767	EPA Method 8015B: Diesel Range	8/12/2008 9:20:00 AM
0808213-06A	OW-23+10	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 8:55:00 AM
0808213-06A	OW-23+10	16767	EPA Method 8015B: Diesel Range	8/12/2008 8:55:00 AM
0808213-06A	OW-23+10	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 8:55:00 AM
0808213-06A	OW-23+10	R29896	EPA Method 8015B: Gasoline Range	8/12/2008 8:55:00 AM
0808213-07A	OW-23+90	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 8:40:00 AM
0808213-07A	OW-23+90	16767	EPA Method 8015B: Diesel Range	8/12/2008 8:40:00 AM
0808213-07A	OW-23+90	R29896	EPA Method 8015B: Gasoline Range	8/12/2008 8:40:00 AM
0808213-08A	OW-25+70	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 8:30:00 AM
0808213-08A	OW-25+70	16767	EPA Method 8015B: Diesel Range	8/12/2008 8:30:00 AM
0808213-08A	OW-25+70	R29896	EPA Method 8015B: Gasoline Range	8/12/2008 8:30:00 AM
0808213-09A	OW-1+50	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 10:15:00 AM
0808213-09A	OW-1+50	R29896	EPA Method 8015B: Gasoline Range	8/12/2008 10:15:00 AM
0808213-09A	OW-1+50	16767	EPA Method 8015B: Diesel Range	8/12/2008 10:15:00 AM

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab Order:** 0808213

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808213-09A	OW-1+50	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 10:15:00 AM
0808213-10A	CW-25+95	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 8:15:00 AM
0808213-10A	CW-25+95	16767	EPA Method 8015B: Diesel Range	8/12/2008 8:15:00 AM
0808213-10A	CW-25+95	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 8:15:00 AM
0808213-11A	CW-0+60	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 10:45:00 AM
0808213-11A	CW-0+60	16767	EPA Method 8015B: Diesel Range	8/12/2008 10:45:00 AM
0808213-11A	CW-0+60	R29801	EPA Method 8260: Volatiles Short List	8/12/2008 10:45:00 AM
0808213-12A	Field Blank	R29776	EPA Method 8260: Volatiles Short List	8/12/2008 10:40:00 AM
0808213-13A	Trip Blank	R29896	EPA Method 8015B: Gasoline Range	
0808213-13A	Trip Blank	R29776	EPA Method 8260: Volatiles Short List	

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808213  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab ID:** 0808213-01

**Client Sample ID:** OW-0+60  
**Collection Date:** 8/12/2008 10:30:00 AM  
**Date Received:** 8/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	6.4	1.0		mg/L	1	8/15/2008 4:21:31 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 4:21:31 PM
Surr: DNOP	107	58-140		%REC	1	8/15/2008 4:21:31 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	2.3	1.2		mg/L	25	8/22/2008 9:47:46 PM
Surr: BFB	96.4	79.2-121		%REC	25	8/22/2008 9:47:46 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/15/2008 10:17:08 AM
Toluene	ND	1.0		µg/L	1	8/15/2008 10:17:08 AM
Ethylbenzene	6.6	1.0		µg/L	1	8/15/2008 10:17:08 AM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/15/2008 10:17:08 AM
Xylenes, Total	19	2.0		µg/L	1	8/15/2008 10:17:08 AM
Surr: 1,2-Dichloroethane-d4	96.1	59.3-133		%REC	1	8/15/2008 10:17:08 AM
Surr: 4-Bromofluorobenzene	115	80.4-119		%REC	1	8/15/2008 10:17:08 AM
Surr: Dibromofluoromethane	100	59.5-134		%REC	1	8/15/2008 10:17:08 AM
Surr: Toluene-d8	97.4	53.5-136		%REC	1	8/15/2008 10:17:08 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808213  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab ID:** 0808213-02

**Client Sample ID:** OW-3+85  
**Collection Date:** 8/12/2008 9:55:00 AM  
**Date Received:** 8/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	12	1.0		mg/L	1	8/15/2008 4:55:54 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 4:55:54 PM
Surr: DNOP	117	58-140		%REC	1	8/15/2008 4:55:54 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	14	2.5		mg/L	50	8/22/2008 10:18:05 PM
Surr: BFB	100	79.2-121		%REC	50	8/22/2008 10:18:05 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	99	10		µg/L	10	8/15/2008 11:18:11 AM
Toluene	ND	10		µg/L	10	8/15/2008 11:18:11 AM
Ethylbenzene	950	10		µg/L	10	8/15/2008 11:18:11 AM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	8/15/2008 11:18:11 AM
Xylenes, Total	3200	200		µg/L	100	8/14/2008 3:19:18 PM
Surr: 1,2-Dichloroethane-d4	92.8	59.3-133		%REC	10	8/15/2008 11:18:11 AM
Surr: 4-Bromofluorobenzene	87.0	80.4-119		%REC	10	8/15/2008 11:18:11 AM
Surr: Dibromofluoromethane	100	59.5-134		%REC	10	8/15/2008 11:18:11 AM
Surr: Toluene-d8	93.7	53.5-136		%REC	10	8/15/2008 11:18:11 AM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808213  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab ID:** 0808213-03

**Client Sample ID:** OW-16+60  
**Collection Date:** 8/12/2008 9:35:00 AM  
**Date Received:** 8/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	7.7	1.0		mg/L	1	8/15/2008 5:30:14 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 5:30:14 PM
Surr: DNOP	109	58-140		%REC	1	8/15/2008 5:30:14 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	17	2.5		mg/L	50	8/22/2008 10:48:32 PM
Surr: BFB	105	79.2-121		%REC	50	8/22/2008 10:48:32 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	1200	50		µg/L	50	8/15/2008 4:42:26 PM
Toluene	ND	10		µg/L	10	8/15/2008 5:12:55 PM
Ethylbenzene	1100	50		µg/L	50	8/15/2008 4:42:26 PM
Methyl tert-butyl ether (MTBE)	3900	50		µg/L	50	8/15/2008 4:42:26 PM
Xylenes, Total	980	20		µg/L	10	8/15/2008 5:12:55 PM
Surr: 1,2-Dichloroethane-d4	99.6	59.3-133		%REC	10	8/15/2008 5:12:55 PM
Surr: 4-Bromofluorobenzene	106	80.4-119		%REC	10	8/15/2008 5:12:55 PM
Surr: Dibromofluoromethane	107	59.5-134		%REC	10	8/15/2008 5:12:55 PM
Surr: Toluene-d8	98.8	53.5-136		%REC	10	8/15/2008 5:12:55 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808213  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab ID:** 0808213-04

**Client Sample ID:** OW-16+60 Dup  
**Collection Date:** 8/12/2008 9:40:00 AM  
**Date Received:** 8/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	8.0	1.0		mg/L	1	8/15/2008 6:04:35 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 6:04:35 PM
Surr: DNOP	115	58-140		%REC	1	8/15/2008 6:04:35 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	17	2.5		mg/L	50	8/22/2008 11:19:02 PM
Surr: BFB	104	79.2-121		%REC	50	8/22/2008 11:19:02 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	1200	50		µg/L	50	8/15/2008 6:12:19 PM
Toluene	ND	10		µg/L	10	8/15/2008 6:42:56 PM
Ethylbenzene	2000	20		µg/L	20	8/15/2008 12:47:59 PM
Methyl tert-butyl ether (MTBE)	3100	50		µg/L	50	8/15/2008 6:12:19 PM
Xylenes, Total	1300	20		µg/L	10	8/15/2008 6:42:56 PM
Surr: 1,2-Dichloroethane-d4	99.4	59.3-133		%REC	10	8/15/2008 6:42:56 PM
Surr: 4-Bromofluorobenzene	99.0	80.4-119		%REC	10	8/15/2008 6:42:56 PM
Surr: Dibromofluoromethane	109	59.5-134		%REC	10	8/15/2008 6:42:56 PM
Surr: Toluene-d8	97.3	53.5-136		%REC	10	8/15/2008 6:42:56 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808213  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab ID:** 0808213-05

**Client Sample ID:** OW-22+00  
**Collection Date:** 8/12/2008 9:20:00 AM  
**Date Received:** 8/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	3.1	1.0		mg/L	1	8/15/2008 6:38:58 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 6:38:58 PM
Surr: DNOP	134	58-140		%REC	1	8/15/2008 6:38:58 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	0.078	0.050		mg/L	1	8/22/2008 11:49:32 PM
Surr: BFB	82.2	79.2-121		%REC	1	8/22/2008 11:49:32 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/15/2008 1:45:44 PM
Toluene	ND	1.0		µg/L	1	8/15/2008 1:45:44 PM
Ethylbenzene	ND	1.0		µg/L	1	8/15/2008 1:45:44 PM
Methyl tert-butyl ether (MTBE)	44	1.0		µg/L	1	8/15/2008 1:45:44 PM
Xylenes, Total	ND	2.0		µg/L	1	8/15/2008 1:45:44 PM
Surr: 1,2-Dichloroethane-d4	97.2	59.3-133		%REC	1	8/15/2008 1:45:44 PM
Surr: 4-Bromofluorobenzene	98.0	80.4-119		%REC	1	8/15/2008 1:45:44 PM
Surr: Dibromofluoromethane	107	59.5-134		%REC	1	8/15/2008 1:45:44 PM
Surr: Toluene-d8	99.8	53.5-136		%REC	1	8/15/2008 1:45:44 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808213  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab ID:** 0808213-06

**Client Sample ID:** OW-23+10  
**Collection Date:** 8/12/2008 8:55:00 AM  
**Date Received:** 8/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	13	1.0		mg/L	1	8/15/2008 7:13:22 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 7:13:22 PM
Surr: DNOP	130	58-140		%REC	1	8/15/2008 7:13:22 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	1.2	0.50		mg/L	10	8/23/2008 12:19:55 AM
Surr: BFB	90.4	79.2-121		%REC	10	8/23/2008 12:19:55 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/15/2008 2:14:38 PM
Toluene	ND	1.0		µg/L	1	8/15/2008 2:14:38 PM
Ethylbenzene	ND	1.0		µg/L	1	8/15/2008 2:14:38 PM
Methyl tert-butyl ether (MTBE)	9.7	1.0		µg/L	1	8/15/2008 2:14:38 PM
Xylenes, Total	ND	2.0		µg/L	1	8/15/2008 2:14:38 PM
Surr: 1,2-Dichloroethane-d4	99.6	59.3-133		%REC	1	8/15/2008 2:14:38 PM
Surr: 4-Bromofluorobenzene	105	80.4-119		%REC	1	8/15/2008 2:14:38 PM
Surr: Dibromofluoromethane	108	59.5-134		%REC	1	8/15/2008 2:14:38 PM
Surr: Toluene-d8	97.7	53.5-136		%REC	1	8/15/2008 2:14:38 PM

**Qualifiers:** \* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808213  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab ID:** 0808213-07

**Client Sample ID:** OW-23+90  
**Collection Date:** 8/12/2008 8:40:00 AM  
**Date Received:** 8/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/15/2008 8:21:53 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 8:21:53 PM
Surr: DNOP	133	58-140		%REC	1	8/15/2008 8:21:53 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/23/2008 12:50:10 AM
Surr: BFB	85.0	79.2-121		%REC	1	8/23/2008 12:50:10 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/14/2008 5:50:10 PM
Toluene	ND	1.0		µg/L	1	8/14/2008 5:50:10 PM
Ethylbenzene	ND	1.0		µg/L	1	8/14/2008 5:50:10 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/14/2008 5:50:10 PM
Xylenes, Total	ND	2.0		µg/L	1	8/14/2008 5:50:10 PM
Surr: 1,2-Dichloroethane-d4	96.3	59.3-133		%REC	1	8/14/2008 5:50:10 PM
Surr: 4-Bromofluorobenzene	104	80.4-119		%REC	1	8/14/2008 5:50:10 PM
Surr: Dibromofluoromethane	103	59.5-134		%REC	1	8/14/2008 5:50:10 PM
Surr: Toluene-d8	98.0	53.5-136		%REC	1	8/14/2008 5:50:10 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW-25+70**Lab Order:** 0808213**Collection Date:** 8/12/2008 8:30:00 AM**Project:** Observation Wells Semi-Annual Aug 2008**Date Received:** 8/13/2008**Lab ID:** 0808213-08**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/15/2008 8:55:59 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 8:55:59 PM
Surr: DNOP	132	58-140		%REC	1	8/15/2008 8:55:59 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/23/2008 1:20:27 AM
Surr: BFB	82.5	79.2-121		%REC	1	8/23/2008 1:20:27 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/14/2008 6:18:51 PM
Toluene	ND	1.0		µg/L	1	8/14/2008 6:18:51 PM
Ethylbenzene	ND	1.0		µg/L	1	8/14/2008 6:18:51 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/14/2008 6:18:51 PM
Xylenes, Total	ND	2.0		µg/L	1	8/14/2008 6:18:51 PM
Surr: 1,2-Dichloroethane-d4	94.9	59.3-133		%REC	1	8/14/2008 6:18:51 PM
Surr: 4-Bromofluorobenzene	104	80.4-119		%REC	1	8/14/2008 6:18:51 PM
Surr: Dibromofluoromethane	97.6	59.5-134		%REC	1	8/14/2008 6:18:51 PM
Surr: Toluene-d8	94.0	53.5-136		%REC	1	8/14/2008 6:18:51 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** OW-1+50**Lab Order:** 0808213**Collection Date:** 8/12/2008 10:15:00 AM**Project:** Observation Wells Semi-Annual Aug 2008**Date Received:** 8/13/2008**Lab ID:** 0808213-09**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	2.9	1.0		mg/L	1	8/15/2008 9:30:03 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 9:30:03 PM
Surr: DNOP	126	58-140		%REC	1	8/15/2008 9:30:03 PM
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	24	5.0		mg/L	100	8/23/2008 3:52:09 AM
Surr: BFB	90.2	79.2-121		%REC	100	8/23/2008 3:52:09 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	76	10		µg/L	10	8/15/2008 2:45:09 PM
Toluene	ND	10		µg/L	10	8/15/2008 2:45:09 PM
Ethylbenzene	950	10		µg/L	10	8/15/2008 2:45:09 PM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	8/15/2008 2:45:09 PM
Xylenes, Total	6700	200		µg/L	100	8/14/2008 7:46:43 PM
Surr: 1,2-Dichloroethane-d4	97.5	59.3-133		%REC	10	8/15/2008 2:45:09 PM
Surr: 4-Bromofluorobenzene	91.1	80.4-119		%REC	100	8/14/2008 7:46:43 PM
Surr: Dibromofluoromethane	105	59.5-134		%REC	10	8/15/2008 2:45:09 PM
Surr: Toluene-d8	92.7	53.5-136		%REC	10	8/15/2008 2:45:09 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808213  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab ID:** 0808213-10

**Client Sample ID:** CW-25+95  
**Collection Date:** 8/12/2008 8:15:00 AM  
**Date Received:** 8/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/15/2008 10:04:10 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 10:04:10 PM
Surr: DNOP	124	58-140		%REC	1	8/15/2008 10:04:10 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	1.8	1.0		µg/L	1	8/15/2008 3:43:02 PM
Toluene	1.1	1.0		µg/L	1	8/15/2008 3:43:02 PM
Ethylbenzene	2.3	1.0		µg/L	1	8/15/2008 3:43:02 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/15/2008 3:43:02 PM
Xylenes, Total	ND	2.0		µg/L	1	8/15/2008 3:43:02 PM
Surr: 1,2-Dichloroethane-d4	97.6	59.3-133		%REC	1	8/15/2008 3:43:02 PM
Surr: 4-Bromofluorobenzene	88.5	80.4-119		%REC	1	8/15/2008 3:43:02 PM
Surr: Dibromofluoromethane	104	59.5-134		%REC	1	8/15/2008 3:43:02 PM
Surr: Toluene-d8	95.6	53.5-136		%REC	1	8/15/2008 3:43:02 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808213  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab ID:** 0808213-11

**Client Sample ID:** CW-0+60  
**Collection Date:** 8/12/2008 10:45:00 AM  
**Date Received:** 8/13/2008  
**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: DIESEL RANGE</b>						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/15/2008 10:38:17 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2008 10:38:17 PM
Surr: DNOP	113	58-140		%REC	1	8/15/2008 10:38:17 PM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	47	1.0		µg/L	1	8/15/2008 4:11:59 PM
Toluene	ND	1.0		µg/L	1	8/15/2008 4:11:59 PM
Ethylbenzene	6.6	1.0		µg/L	1	8/15/2008 4:11:59 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/15/2008 4:11:59 PM
Xylenes, Total	ND	2.0		µg/L	1	8/15/2008 4:11:59 PM
Surr: 1,2-Dichloroethane-d4	98.7	59.3-133		%REC	1	8/15/2008 4:11:59 PM
Surr: 4-Bromofluorobenzene	90.9	80.4-119		%REC	1	8/15/2008 4:11:59 PM
Surr: Dibromofluoromethane	98.3	59.5-134		%REC	1	8/15/2008 4:11:59 PM
Surr: Toluene-d8	98.6	53.5-136		%REC	1	8/15/2008 4:11:59 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 04-Sep-08

CLIENT: Western Refining Southwest, Inc.  
 Lab Order: 0808213  
 Project: Observation Wells Semi-Annual Aug 2008  
 Lab ID: 0808213-12

Client Sample ID: Field Blank  
 Collection Date: 8/12/2008 10:40:00 AM  
 Date Received: 8/13/2008  
 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/14/2008 10:13:59 PM
Toluene	ND	1.0		µg/L	1	8/14/2008 10:13:59 PM
Ethylbenzene	ND	1.0		µg/L	1	8/14/2008 10:13:59 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/14/2008 10:13:59 PM
Xylenes, Total	ND	2.0		µg/L	1	8/14/2008 10:13:59 PM
Surr: 1,2-Dichloroethane-d4	91.5	59.3-133		%REC	1	8/14/2008 10:13:59 PM
Surr: 4-Bromofluorobenzene	99.8	80.4-119		%REC	1	8/14/2008 10:13:59 PM
Surr: Dibromofluoromethane	96.6	59.5-134		%REC	1	8/14/2008 10:13:59 PM
Surr: Toluene-d8	99.3	53.5-136		%REC	1	8/14/2008 10:13:59 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



**Hall Environmental Analysis Laboratory, Inc.**

Date: 04-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Lab Order:** 0808213  
**Project:** Observation Wells Semi-Annual Aug 2008  
**Lab ID:** 0808213-13

**Client Sample ID:** Trip Blank  
**Collection Date:**  
**Date Received:** 8/13/2008  
**Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015B: GASOLINE RANGE</b>						Analyst: DAM
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/23/2008 4:52:58 AM
Surr: BFB	82.2	79.2-121		%REC	1	8/23/2008 4:52:58 AM
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/14/2008 10:42:53 PM
Toluene	ND	1.0		µg/L	1	8/14/2008 10:42:53 PM
Ethylbenzene	ND	1.0		µg/L	1	8/14/2008 10:42:53 PM
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/14/2008 10:42:53 PM
Xylenes, Total	ND	2.0		µg/L	1	8/14/2008 10:42:53 PM
Surr: 1,2-Dichloroethane-d4	95.4	59.3-133		%REC	1	8/14/2008 10:42:53 PM
Surr: 4-Bromofluorobenzene	99.4	80.4-119		%REC	1	8/14/2008 10:42:53 PM
Surr: Dibromofluoromethane	99.8	59.5-134		%REC	1	8/14/2008 10:42:53 PM
Surr: Toluene-d8	96.5	53.5-136		%REC	1	8/14/2008 10:42:53 PM

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

04-Sep-08

Lab Order: 0808213

Client: Western Refining Southwest, Inc.

Project: Observation Wells Semi-Annual A

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808213-01A	OW-0+60	8/12/2008 10:30:00 AM	Aqueous	EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8015B: Gasoline Range	R29896		8/22/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
0808213-02A	OW-3+85	8/12/2008 9:55:00 AM		EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8015B: Gasoline Range	R29896		8/22/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
0808213-03A	OW-16+60	8/12/2008 9:35:00 AM		EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8015B: Gasoline Range	R29896		8/22/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
0808213-04A	OW-16+60 Dup	8/12/2008 9:40:00 AM		EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8015B: Gasoline Range	R29896		8/22/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
0808213-05A	OW-22+00	8/12/2008 9:20:00 AM		EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8015B: Gasoline Range	R29896		8/22/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008

Lab Order: 0808213

Client: Western Refining Southwest, Inc.

Project: Observation Wells Semi-Annual A

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808213-06A	OW-23+10	8/12/2008 8:55:00 AM	Aqueous	EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8015B: Gasoline Range	R29896		8/23/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
0808213-07A	OW-23+90	8/12/2008 8:40:00 AM		EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8015B: Gasoline Range	R29896		8/23/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
0808213-08A	OW-25+70	8/12/2008 8:30:00 AM		EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8015B: Gasoline Range	R29896		8/23/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
0808213-09A	OW-1+50	8/12/2008 10:15:00 AM		EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8015B: Gasoline Range	R29896		8/23/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
0808213-10A	CW-25+95	8/12/2008 8:15:00 AM		EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
0808213-11A	CW-0+60	8/12/2008 10:45:00 AM		EPA Method 8015B: Diesel Range	16767	8/13/2008	8/15/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008
				EPA Method 8260: Volatiles Short List	R29801		8/15/2008
0808213-12A	Field Blank	8/12/2008 10:40:00 AM		EPA Method 8260: Volatiles Short List	16767	8/13/2008	8/15/2008
0808213-13A	Trip Blank		Trip Blank	EPA Method 8260: Volatiles Short List	R29776		8/14/2008
				EPA Method 8015B: Gasoline Range	R29896		8/23/2008
				EPA Method 8260: Volatiles Short List	R29776		8/14/2008

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Observation Wells Semi-Annual Aug 2008

Work Order: 0808213

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 8015B: Diesel Range</b>									
Sample ID: MB-16767		MBLK			Batch ID: 16767		Analysis Date: 8/15/2008 2:04:22 PM		
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Surr: DNOP	1.081	mg/L	0	108	58	140			
Sample ID: LCS-16767		LCS			Batch ID: 16767		Analysis Date: 8/15/2008 2:38:27 PM		
Diesel Range Organics (DRO)	4.676	mg/L	1.0	93.5	74	157			
Surr: DNOP	0.4651	mg/L	0	93.0	58	140			
Sample ID: LCSD-16767		LCSD			Batch ID: 16767		Analysis Date: 8/15/2008 3:12:48 PM		
Diesel Range Organics (DRO)	4.837	mg/L	1.0	96.7	74	157	3.38	23	
Surr: DNOP	0.5492	mg/L	0	110	58	140	0	0	
<b>Method: EPA Method 8015B: Gasoline Range</b>									
Sample ID: 0808213-05A-MSD		MSD			Batch ID: R29896		Analysis Date: 8/23/2008 5:53:45 AM		
Gasoline Range Organics (GRO)	0.4608	mg/L	0.050	92.2	80	115	0.735	8.39	
Surr: BFB	17.89	mg/L	0	89.4	79.2	121	0	0	
Sample ID: 5ML RB		MBLK			Batch ID: R29896		Analysis Date: 8/22/2008 1:10:43 PM		
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	17.46	mg/L	0	87.3	79.2	121			
Sample ID: 5ML RB		MBLK			Batch ID: R29896		Analysis Date: 8/22/2008 1:10:43 PM		
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Surr: BFB	17.46	mg/L	0	87.3	79.2	121			
Sample ID: 2.5UG LCS-GRO		LCS			Batch ID: R29896		Analysis Date: 8/23/2008 2:34:11 PM		
Gasoline Range Organics (GRO)	0.4270	mg/L	0.050	85.4	80	115			
Surr: BFB	15.78	mg/L	0	78.9	79.2	121			S
Sample ID: 0808213-05A-MS		MS			Batch ID: R29896		Analysis Date: 8/23/2008 5:23:20 AM		
Gasoline Range Organics (GRO)	0.4642	mg/L	0.050	92.8	80	115			
Surr: BFB	16.18	mg/L	0	80.9	79.2	121			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: Observation Wells Semi-Annual Aug 2008

Work Order: 0808213

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8260: Volatiles Short List

Sample ID: 0808213-08a MSD		MSD			Batch ID: R29776		Analysis Date: 8/14/2008 7:16:14 PM	
Benzene	21.16	µg/L	1.0	106	72.4	126	0.838	20
Toluene	20.30	µg/L	1.0	101	79.2	115	1.00	20
Surr: 1,2-Dichloroethane-d4	9.640	µg/L	0	96.4	59.3	133	0	0
Surr: 4-Bromofluorobenzene	10.17	µg/L	0	102	80.4	119	0	0
Surr: Dibromofluoromethane	9.850	µg/L	0	98.5	59.5	134	0	0
Surr: Toluene-d8	9.768	µg/L	0	97.7	53.5	136	0	0

Sample ID: 5ml rb		MBLK		Batch ID: R29776		Analysis Date: 8/14/2008 12:18:31 PM	
Benzene	ND	µg/L	1.0				
Toluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Surr: 1,2-Dichloroethane-d4	9.492	µg/L	0	94.9	59.3	133	
Surr: 4-Bromofluorobenzene	10.06	µg/L	0	101	80.4	119	
Surr: Dibromofluoromethane	9.598	µg/L	0	96.0	59.5	134	
Surr: Toluene-d8	9.988	µg/L	0	99.9	53.5	136	

Sample ID: 5ml rb		MBLK		Batch ID: R29801		Analysis Date: 8/15/2008 8:22:02 AM	
Benzene	ND	µg/L	1.0				
Toluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Surr: 1,2-Dichloroethane-d4	9.432	µg/L	0	94.3	59.3	133	
Surr: 4-Bromofluorobenzene	9.996	µg/L	0	100	80.4	119	
Surr: Dibromofluoromethane	9.336	µg/L	0	93.4	59.5	134	
Surr: Toluene-d8	9.734	µg/L	0	97.3	53.5	136	

Sample ID: 100ng lcs		LCS			Batch ID: R29776		Analysis Date: 8/14/2008 1:45:09 PM	
Benzene	20.03	µg/L	1.0	100	86.8	120		
Toluene	19.37	µg/L	1.0	96.8	64.1	127		
Surr: 1,2-Dichloroethane-d4	9.500	µg/L	0	95.0	59.3	133		
Surr: 4-Bromofluorobenzene	10.32	µg/L	0	103	80.4	119		
Surr: Dibromofluoromethane	9.748	µg/L	0	97.5	59.5	134		
Surr: Toluene-d8	9.790	µg/L	0	97.9	53.5	136		

Sample ID: 100ng lcs		LCS			Batch ID: R29801		Analysis Date: 8/15/2008 9:19:29 AM	
Benzene	20.35	µg/L	1.0	102	86.8	120		
Toluene	19.16	µg/L	1.0	95.8	64.1	127		
Surr: 1,2-Dichloroethane-d4	9.440	µg/L	0	94.4	59.3	133		
Surr: 4-Bromofluorobenzene	10.04	µg/L	0	100	80.4	119		
Surr: Dibromofluoromethane	9.622	µg/L	0	96.2	59.5	134		
Surr: Toluene-d8	9.676	µg/L	0	96.8	53.5	136		

Sample ID: 0808213-08a MS			MS		Batch ID: R29776		Analysis Date: 8/14/2008 6:47:32 PM	
Benzene	21.34	µg/L	1.0	107	72.4	126		
Toluene	20.09	µg/L	1.0	100	79.2	115		

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: Observation Wells Semi-Annual Aug 2008

Work Order: 0808213

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260: Volatiles Short List

Sample ID: 0808213-08a MS

MS

Batch ID: R29776 Analysis Date: 8/14/2008 6:47:32 PM

Surr: 1,2-Dichloroethane-d4	9.700	µg/L	0	97.0	59.3	133
Surr: 4-Bromofluorobenzene	9.886	µg/L	0	98.9	80.4	119
Surr: Dibromofluoromethane	9.902	µg/L	0	99.0	59.5	134
Surr: Toluene-d8	9.690	µg/L	0	96.9	53.5	136

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/13/2008

Work Order Number 0808213

Received by: ARS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/> Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Container/Temp Blank temperature?

2°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

# Chain-of-Custody Record

Client: Western Refining (Blmld)

Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

QA/QC Package:

- ☐ Standard ☒ Level 4 (Full Validation)  
☐ Other \_\_\_\_\_  
☐ EDD (Type) \_\_\_\_\_

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Observation Wells

Project #: Semi-Annual Aug 2008

Project Manager:

Sampler: Cindy/ Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 18.2 °C AT 11:30A

Date

Time

Sample Request ID

Container Type and #

Preservative Type

HEAL No.

8/12/08

1030A

OW-0+60

6-10A

HCl

0808213

955A

OW-3+85

-1

935A

OW-16+60

-2

940A

OW-16+60 Dup

-3

~~920A~~

~~OW-22+00~~

~~-4~~

855A

OW-23+10

-5

840A

OW-23+90

-6

830A

OW-25+70

-7

1015A

OW 1+50

-8

-9

Date:

Time:

Relinquished by:

Relinquished by:

Received by:

Remarks:

Received by:

9:55 8/13/08

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH Method 8015B (Gas/Diesel)

TPH (Method 418.1)

EDB (Method 504.1)

EDC (Method 8260)

8310 (PNA or PAH)

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / 8082 PCB's

8260B (VOA) BTEX, MTBE only

8270 (Semi-VOA)

Air Bubbles (Y or N)



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

# Analysis Request

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Collection Wells Semi Annual Aug 2008

Project #:

**Project Manager:**

Sampler:

On/once: 5 Yes ☒ No ☐

**Sample Temperature:**

Date	Time	Sample Request ID
------	------	-------------------

Container Type and #	Preservative Type
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HEAL No.

0808213

812-08	815A	CW. 25+95
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1	1045a	CW 0+60
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1040A	Field Blank
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At Trip Blank	
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9/13/96

Date:	Time:
-------	-------

Time:

Refrindished by:

12-08	2:30pm	Unitado
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Date:	Time:	Belinquished by:
-------	-------	------------------

Received by:

Received by:

Remarks:

9.5581307

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)☐ Other☐ EDD (Type)☒ Level 4 (Full Validation)

Any sub-contracted data will be clearly notated on the analytical report. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

COVER LETTER

Monday, April 21, 2008

Cindy Hurtado  
San Juan Refining  
#50 CR 4990  
Bloomfield, NM 87413

TEL: (505) 632-4161

FAX (505) 632-3911

RE: Outfalls April 2008

Order No.: 0804183

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 4 sample(s) on 4/16/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



# Hall Environmental Analysis Laboratory, Inc.

Date: 21-Apr-08

CLIENT: San Juan Refining  
Project: Outfalls April 2008

Lab Order: 0804183

Lab ID: 0804183-01

Collection Date: 4/15/2008 10:20:00 AM

Client Sample ID: Outfall #1

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	4/19/2008 11:54:13 AM
Toluene	ND	1.0		µg/L	1	4/19/2008 11:54:13 AM
Ethylbenzene	ND	1.0		µg/L	1	4/19/2008 11:54:13 AM
Xylenes, Total	ND	2.0		µg/L	1	4/19/2008 11:54:13 AM
Surr: 4-Bromofluorobenzene	88.2	68.9-122		%REC	1	4/19/2008 11:54:13 AM

Lab ID: 0804183-02

Collection Date: 4/15/2008 10:15:00 AM

Client Sample ID: Outfall #6

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	4/19/2008 12:54:13 PM
Toluene	ND	1.0		µg/L	1	4/19/2008 12:54:13 PM
Ethylbenzene	ND	1.0		µg/L	1	4/19/2008 12:54:13 PM
Xylenes, Total	ND	2.0		µg/L	1	4/19/2008 12:54:13 PM
Surr: 4-Bromofluorobenzene	85.3	68.9-122		%REC	1	4/19/2008 12:54:13 PM

Lab ID: 0804183-03

Collection Date: 4/15/2008 10:10:00 AM

Client Sample ID: Outfall #7

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	4/19/2008 1:24:23 PM
Toluene	ND	1.0		µg/L	1	4/19/2008 1:24:23 PM
Ethylbenzene	3.8	1.0		µg/L	1	4/19/2008 1:24:23 PM
Xylenes, Total	4.2	2.0		µg/L	1	4/19/2008 1:24:23 PM
Surr: 4-Bromofluorobenzene	87.9	68.9-122		%REC	1	4/19/2008 1:24:23 PM

Lab ID: 0804183-04

Collection Date: 4/15/2008 10:30:00 AM

Client Sample ID: Outfall #9

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	4/19/2008 2:24:42 PM
Toluene	ND	1.0		µg/L	1	4/19/2008 2:24:42 PM
Ethylbenzene	ND	1.0		µg/L	1	4/19/2008 2:24:42 PM
Xylenes, Total	ND	2.0		µg/L	1	4/19/2008 2:24:42 PM
Surr: 4-Bromofluorobenzene	89.3	68.9-122		%REC	1	4/19/2008 2:24:42 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San Juan Refining  
Project: Outfalls April 2008

Work Order: 0804183

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8021B: Volatiles

Sample ID: 5ML RB

MBLK

Batch ID: R28165 Analysis Date: 4/18/2008 8:42:39 AM

Benzene	ND	µg/L	1.0
Toluene	ND	µg/L	1.0
Ethylbenzene	ND	µg/L	1.0
Xylenes, Total	ND	µg/L	2.0

Sample ID: 100NG BTEX LCS

LCS

Batch ID: R28165 Analysis Date: 4/18/2008 3:51:21 PM

Benzene	20.58	µg/L	1.0	103	85.9	113
Toluene	20.34	µg/L	1.0	102	86.4	113
Ethylbenzene	20.42	µg/L	1.0	102	83.5	118
Xylenes, Total	61.03	µg/L	2.0	102	83.4	122

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name SJR

Date Received:

4/16/2008

Work Order Number 0804183

Received by: ARS

Sample ID labels checked by:

Initials

Checklist completed by:

Signature

Date

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☐

Yes ☒

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☒

N/A ☐

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

2°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action

# Chain-of-Custody Record

Client: SAN JUAN REFINING  
 (Western Refining)  
 Address: #50 CR 4990  
Bloomfield NM 87413  
 Phone #: 505-632-4661  
 email or Fax#: 505-632-  
 QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)  
☐ Other ☐ EDD (Type) \_\_\_\_\_

Turn-Around Time:

☐ Standard ☐ Rush

Project Name:

Outfalls April 2008

Project #:

Project Manager:

Sampler: Bob Krakow

On Ice: ☒ Yes ☐ No

Sample Temperature: 2

Date Time Sample Request ID

4-15-08 1020A outfall #1  
1015A outfall #6  
1010A outfall #7  
1030A outfall #9

Container Type and #

2-VOA  
1  
2  
3  
4

HEAL No.

0804183  
1  
2  
3  
4

Preservative Type

NCL  
1  
2  
3  
4

Date: 4-15-08

Time: 108 pm

Relinquished by: Emily Putabo

Relinquished by: Emily Putabo

Received by: [Signature]

Received by: 10:15 4/16/08

Remarks:

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

BTX + MTBE + TPH (Gas only)	
BTX + MTBE + TPH (8021)	X
TPH Method 8015B (Gas/Diesel)	
TPH (Method 418.1)	
EDB (Method 504.1)	
EDC (Method 8260)	
8310 (PNA or PAH)	
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	
8081 Pesticides / 8082 PCBs	
8260B (VOA)	
8270 (Semi-VOA)	
Air Bubbles (Y or N)	

COVER LETTER

Wednesday, September 03, 2008

Cindy Hurtado  
Western Refining Southwest, Inc.  
#50 CR 4990  
Bloomfield, NM 87413  
TEL: (505) 632-4161  
FAX (505) 632-3911

RE: San Juan River Bluff Seeps Semi-Annual  
Aug 2008

Order No.: 0808219

Dear Cindy Hurtado:

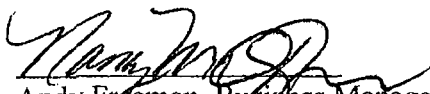
Hall Environmental Analysis Laboratory, Inc. received 5 sample(s) on 8/13/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

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

Sincerely,



Andy Freeman, Business Manager  
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425  
AZ license # AZ0682  
ORELAP Lab # NM100001



**Hall Environmental Analysis Laboratory, Inc.**

Date: 03-Sep-08

**CLIENT:** Western Refining Southwest, Inc.  
**Project:** San Juan River Bluff Seeps Semi-Annual Aug 2  
**Lab Order:** 0808219

**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0808219-01A	Seep #1	R29757	EPA Method 8260: Volatiles Short List	8/12/2008 2:00:00 PM
0808219-01B	Seep #1	16775	EPA Method 8270C: Semivolatiles	8/12/2008 2:00:00 PM
0808219-01B	Seep #1	16818	EPA Method 8270C: Semivolatiles	8/12/2008 2:00:00 PM
0808219-01C	Seep #1	R29778	EPA Method 300.0: Anions	8/12/2008 2:00:00 PM
0808219-01C	Seep #1	R29778	EPA Method 300.0: Anions	8/12/2008 2:00:00 PM
0808219-01C	Seep #1	R29839	SM 2320B: Alkalinity	8/12/2008 2:00:00 PM
0808219-01C	Seep #1	R29846	Carbon Dioxide	8/12/2008 2:00:00 PM
0808219-01C	Seep #1	R30012	EPA Method 300.0: Anions	8/12/2008 2:00:00 PM
0808219-02A	Seep #3	R29757	EPA Method 8260: Volatiles Short List	8/12/2008 2:10:00 PM
0808219-02B	Seep #3	16775	EPA Method 8270C: Semivolatiles	8/12/2008 2:10:00 PM
0808219-02C	Seep #3	R30012	EPA Method 300.0: Anions	8/12/2008 2:10:00 PM
0808219-02C	Seep #3	R29778	EPA Method 300.0: Anions	8/12/2008 2:10:00 PM
0808219-02C	Seep #3	R29778	EPA Method 300.0: Anions	8/12/2008 2:10:00 PM
0808219-02C	Seep #3	R29839	SM 2320B: Alkalinity	8/12/2008 2:10:00 PM
0808219-02C	Seep #3	R29846	Carbon Dioxide	8/12/2008 2:10:00 PM
0808219-03A	Seep #6	R29757	EPA Method 8260: Volatiles Short List	8/12/2008 1:00:00 PM
0808219-03B	Seep #6	16775	EPA Method 8270C: Semivolatiles	8/12/2008 1:00:00 PM
0808219-03C	Seep #6	R29778	EPA Method 300.0: Anions	8/12/2008 1:00:00 PM
0808219-03C	Seep #6	R29778	EPA Method 300.0: Anions	8/12/2008 1:00:00 PM
0808219-03C	Seep #6	R29839	SM 2320B: Alkalinity	8/12/2008 1:00:00 PM
0808219-03C	Seep #6	R29846	Carbon Dioxide	8/12/2008 1:00:00 PM
0808219-03C	Seep #6	R30012	EPA Method 300.0: Anions	8/12/2008 1:00:00 PM
0808219-04A	Seep #6 Dup	R29757	EPA Method 8260: Volatiles Short List	8/12/2008 1:05:00 PM
0808219-04B	Seep #6 Dup	16775	EPA Method 8270C: Semivolatiles	8/12/2008 1:05:00 PM
0808219-04B	Seep #6 Dup	16818	EPA Method 8270C: Semivolatiles	8/12/2008 1:05:00 PM
0808219-04C	Seep #6 Dup	R29778	EPA Method 300.0: Anions	8/12/2008 1:05:00 PM
0808219-04C	Seep #6 Dup	R29778	EPA Method 300.0: Anions	8/12/2008 1:05:00 PM
0808219-04C	Seep #6 Dup	R29839	SM 2320B: Alkalinity	8/12/2008 1:05:00 PM
0808219-04C	Seep #6 Dup	R29846	Carbon Dioxide	8/12/2008 1:05:00 PM
0808219-04C	Seep #6 Dup	R30012	EPA Method 300.0: Anions	8/12/2008 1:05:00 PM
0808219-05A	Trip Blan	R29757	EPA Method 8260: Volatiles Short List	



**Hall Environmental Analysis Laboratory, Inc.**

Date: 05-Sep-08

CLIENT: Western Refining Southwest, Inc.  
Project: San Juan River Bluff Seeps Semi-Annual Aug 20  
Lab Order: 0808219

**CASE NARRATIVE**

METHOD: 300.0

HOLDING TIMES: All holding times for Preparation and Analysis were met.

METHOD: Preparations: none  
Analysis: 300.0

PREPARATION: Sample preparation proceeded normally.

**ANALYSIS:**

1. Calibration: All acceptance criteria were met.
2. Blanks: All acceptance criteria were met.
4. Duplicates: All acceptance criteria were met.
5. Spikes: Sample Seep #6 Dup MS/MSD failed for o-PO<sub>4</sub> due to high concentrations of sulfate and chloride in the parent sample.
6. Samples: All acceptance criteria were met.

No Notes for other methods indicate that all QC were within acceptable parameters.

# Hall Environmental Analysis Laboratory, Inc.

Date: 03-Sep-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Seep #1

Lab Order: 0808219

Collection Date: 8/12/2008 2:00:00 PM

Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Date Received: 8/13/2008

Lab ID: 0808219-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.35	0.10		mg/L	1	8/13/2008 10:25:31 PM
Chloride	370	1.0		mg/L	10	8/13/2008 10:42:55 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/13/2008 10:42:55 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/13/2008 10:25:31 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/13/2008 10:25:31 PM
Sulfate	1500	25		mg/L	50	8/28/2008 3:00:38 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/20/2008
Acenaphthylene	ND	10		µg/L	1	8/20/2008
Aniline	ND	10		µg/L	1	8/20/2008
Anthracene	ND	10		µg/L	1	8/20/2008
Azobenzene	ND	10		µg/L	1	8/20/2008
Benz(a)anthracene	ND	10		µg/L	1	8/20/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/20/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/20/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/20/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/20/2008
Benzoic acid	ND	20		µg/L	1	8/20/2008
Benzyl alcohol	ND	10		µg/L	1	8/20/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/20/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/20/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/20/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/20/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/20/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/20/2008
Carbazole	ND	10		µg/L	1	8/20/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/20/2008
4-Chloroaniline	ND	10		µg/L	1	8/20/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/20/2008
2-Chlorophenol	ND	10		µg/L	1	8/20/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/20/2008
Chrysene	ND	10		µg/L	1	8/20/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/20/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/20/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/20/2008
Dibenzofuran	ND	10		µg/L	1	8/20/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/20/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/20/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/20/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/20/2008
Diethyl phthalate	ND	10		µg/L	1	8/20/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 03-Sep-08

CLIENT: Western Refining Southwest, Inc. Client Sample ID: Seep #1  
 Lab Order: 0808219 Collection Date: 8/12/2008 2:00:00 PM  
 Project: San Juan River Bluff Seeps Semi-Annual Aug 2 Date Received: 8/13/2008  
 Lab ID: 0808219-01 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Dimethyl phthalate	ND	10		µg/L	1	8/20/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/20/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/20/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/20/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/20/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/20/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/20/2008
Fluoranthene	ND	10		µg/L	1	8/20/2008
Fluorene	ND	10		µg/L	1	8/20/2008
Hexachlorobenzene	ND	10		µg/L	1	8/20/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/20/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/20/2008
Hexachloroethane	ND	10		µg/L	1	8/20/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/20/2008
Isophorone	ND	10		µg/L	1	8/20/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/20/2008
2-Methylphenol	ND	10		µg/L	1	8/20/2008
3+4-Methylphenol	ND	10		µg/L	1	8/20/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/20/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/20/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/20/2008
Naphthalene	ND	10		µg/L	1	8/20/2008
2-Nitroaniline	ND	10		µg/L	1	8/20/2008
3-Nitroaniline	ND	10		µg/L	1	8/20/2008
4-Nitroaniline	ND	10		µg/L	1	8/20/2008
Nitrobenzene	ND	10		µg/L	1	8/20/2008
2-Nitrophenol	ND	10		µg/L	1	8/20/2008
4-Nitrophenol	ND	10		µg/L	1	8/20/2008
Pentachlorophenol	ND	40		µg/L	1	8/20/2008
Phenanthrene	ND	10		µg/L	1	8/20/2008
Phenol	ND	10		µg/L	1	8/20/2008
Pyrene	ND	10		µg/L	1	8/20/2008
Pyridine	ND	10		µg/L	1	8/20/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/20/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/20/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/20/2008
Surr: 2,4,6-Tribromophenol	17.0	16.6-150		%REC	1	8/20/2008
Surr: 2-Fluorobiphenyl	83.9	19.6-134		%REC	1	8/20/2008
Surr: 2-Fluorophenol	16.2	9.54-113		%REC	1	8/20/2008
Surr: 4-Terphenyl-d14	59.3	22.7-145		%REC	1	8/20/2008
Surr: Nitrobenzene-d5	79.7	14.6-134		%REC	1	8/20/2008
Surr: Phenol-d5	22.0	10.7-80.3		%REC	1	8/20/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level B Analyte detected in the associated Method Blank  
 E Value above quantitation range H Holding times for preparation or analysis exceeded  
 J Analyte detected below quantitation limits MCL Maximum Contaminant Level  
 ND Not Detected at the Reporting Limit RL Reporting Limit  
 S Spike recovery outside accepted recovery limits

**Hall Environmental Analysis Laboratory, Inc.**

Date: 03-Sep-08

**CLIENT:** Western Refining Southwest, Inc. **Client Sample ID:** Seep #1  
**Lab Order:** 0808219 **Collection Date:** 8/12/2008 2:00:00 PM  
**Project:** San Juan River Bluff Seeps Semi-Annual Aug 2 **Date Received:** 8/13/2008  
**Lab ID:** 0808219-01 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/14/2008 5:03:09 AM
Toluene	ND	1.0		µg/L	1	8/14/2008 5:03:09 AM
Ethylbenzene	ND	1.0		µg/L	1	8/14/2008 5:03:09 AM
Methyl tert-butyl ether (MTBE)	42	1.5		µg/L	1	8/14/2008 5:03:09 AM
Xylenes, Total	ND	3.0		µg/L	1	8/14/2008 5:03:09 AM
Surr: 4-Bromofluorobenzene	98.4	80.4-119		%REC	1	8/14/2008 5:03:09 AM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO <sub>3</sub> )	250	20		mg/L CaCO <sub>3</sub>	1	8/19/2008
Carbonate	ND	2.0		mg/L CaCO <sub>3</sub>	1	8/19/2008
Bicarbonate	250	20		mg/L CaCO <sub>3</sub>	1	8/19/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	230	1.0		mg CO <sub>2</sub> /L	1	8/20/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 03-Sep-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Seep #3

Lab Order: 0808219

Collection Date: 8/12/2008 2:10:00 PM

Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Date Received: 8/13/2008

Lab ID: 0808219-02

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.80	0.10		mg/L	1	8/13/2008 11:00:20 PM
Chloride	370	1.0		mg/L	10	8/13/2008 11:17:45 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/13/2008 11:17:45 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/13/2008 11:00:20 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/13/2008 11:00:20 PM
Sulfate	2500	25		mg/L	50	8/28/2008 3:18:03 PM
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/18/2008
Acenaphthylene	ND	10		µg/L	1	8/18/2008
Aniline	ND	10		µg/L	1	8/18/2008
Anthracene	ND	10		µg/L	1	8/18/2008
Azobenzene	ND	10		µg/L	1	8/18/2008
Benz(a)anthracene	ND	10		µg/L	1	8/18/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/18/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/18/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/18/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/18/2008
Benzoic acid	ND	80		µg/L	1	8/18/2008
Benzyl alcohol	ND	10		µg/L	1	8/18/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/18/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/18/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/18/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/18/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/18/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/18/2008
Carbazole	ND	10		µg/L	1	8/18/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/18/2008
4-Chloroaniline	ND	10		µg/L	1	8/18/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/18/2008
2-Chlorophenol	ND	10		µg/L	1	8/18/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/18/2008
Chrysene	ND	10		µg/L	1	8/18/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/18/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/18/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/18/2008
Dibenzofuran	ND	10		µg/L	1	8/18/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/18/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/18/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/18/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/18/2008
Diethyl phthalate	ND	10		µg/L	1	8/18/2008

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 03-Sep-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Seep #3

Lab Order: 0808219

Collection Date: 8/12/2008 2:10:00 PM

Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Date Received: 8/13/2008

Lab ID: 0808219-02

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Dimethyl phthalate	ND	10		µg/L	1	8/18/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/18/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/18/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/18/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/18/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/18/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/18/2008
Fluoranthene	ND	10		µg/L	1	8/18/2008
Fluorene	ND	10		µg/L	1	8/18/2008
Hexachlorobenzene	ND	10		µg/L	1	8/18/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/18/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/18/2008
Hexachloroethane	ND	10		µg/L	1	8/18/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/18/2008
Isophorone	ND	10		µg/L	1	8/18/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/18/2008
2-Methylphenol	ND	10		µg/L	1	8/18/2008
3+4-Methylphenol	ND	10		µg/L	1	8/18/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/18/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/18/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/18/2008
Naphthalene	ND	10		µg/L	1	8/18/2008
2-Nitroaniline	ND	10		µg/L	1	8/18/2008
3-Nitroaniline	ND	10		µg/L	1	8/18/2008
4-Nitroaniline	ND	10		µg/L	1	8/18/2008
Nitrobenzene	ND	10		µg/L	1	8/18/2008
2-Nitrophenol	ND	10		µg/L	1	8/18/2008
4-Nitrophenol	ND	10		µg/L	1	8/18/2008
Pentachlorophenol	ND	20		µg/L	1	8/18/2008
Phenanthrene	ND	10		µg/L	1	8/18/2008
Phenol	ND	10		µg/L	1	8/18/2008
Pyrene	ND	10		µg/L	1	8/18/2008
Pyridine	ND	10		µg/L	1	8/18/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/18/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/18/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/18/2008
Surr: 2,4,6-Tribromophenol	72.7	16.6-150		%REC	1	8/18/2008
Surr: 2-Fluorobiphenyl	73.8	19.6-134		%REC	1	8/18/2008
Surr: 2-Fluorophenol	54.9	9.54-113		%REC	1	8/18/2008
Surr: 4-Terphenyl-d14	71.1	22.7-145		%REC	1	8/18/2008
Surr: Nitrobenzene-d5	71.4	14.6-134		%REC	1	8/18/2008
Surr: Phenol-d5	42.4	10.7-80.3		%REC	1	8/18/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 03-Sep-08

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Seep #3**Lab Order:** 0808219**Collection Date:** 8/12/2008 2:10:00 PM**Project:** San Juan River Bluff Seeps Semi-Annual Aug 2**Date Received:** 8/13/2008**Lab ID:** 0808219-02**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/14/2008 5:31:54 AM
Toluene	ND	1.0		µg/L	1	8/14/2008 5:31:54 AM
Ethylbenzene	ND	1.0		µg/L	1	8/14/2008 5:31:54 AM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	8/14/2008 5:31:54 AM
Xylenes, Total	ND	3.0		µg/L	1	8/14/2008 5:31:54 AM
Surr: 4-Bromofluorobenzene	100	80.4-119		%REC	1	8/14/2008 5:31:54 AM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO <sub>3</sub> )	160	20		mg/L CaCO <sub>3</sub>	1	8/19/2008
Carbonate	ND	2.0		mg/L CaCO <sub>3</sub>	1	8/19/2008
Bicarbonate	160	20		mg/L CaCO <sub>3</sub>	1	8/19/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	140	1.0		mg CO <sub>2</sub> /L	1	8/20/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 03-Sep-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Seep #6

Lab Order: 0808219

Collection Date: 8/12/2008 1:00:00 PM

Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Date Received: 8/13/2008

Lab ID: 0808219-03

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.47	0.10		mg/L	1	8/13/2008 11:35:10 PM
Chloride	2500	10		mg/L	100	8/28/2008 3:35:27 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/13/2008 11:52:35 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/13/2008 11:35:10 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/13/2008 11:35:10 PM
Sulfate	960	50		mg/L	100	8/28/2008 3:35:27 PM

## EPA METHOD 8270C: SEMIVOLATILES

Analyst: JDC

Acenaphthene	ND	10		µg/L	1	8/18/2008
Acenaphthylene	ND	10		µg/L	1	8/18/2008
Aniline	ND	10		µg/L	1	8/18/2008
Anthracene	ND	10		µg/L	1	8/18/2008
Azobenzene	ND	10		µg/L	1	8/18/2008
Benz(a)anthracene	ND	10		µg/L	1	8/18/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/18/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/18/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/18/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/18/2008
Benzoic acid	ND	80		µg/L	1	8/18/2008
Benzyl alcohol	ND	10		µg/L	1	8/18/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/18/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/18/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/18/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/18/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/18/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/18/2008
Carbazole	ND	10		µg/L	1	8/18/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/18/2008
4-Chloroaniline	ND	10		µg/L	1	8/18/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/18/2008
2-Chlorophenol	ND	10		µg/L	1	8/18/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/18/2008
Chrysene	ND	10		µg/L	1	8/18/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/18/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/18/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/18/2008
Dibenzofuran	ND	10		µg/L	1	8/18/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/18/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/18/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/18/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/18/2008
Diethyl phthalate	ND	10		µg/L	1	8/18/2008

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



## Hall Environmental Analysis Laboratory, Inc.

Date: 03-Sep-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Seep #6

Lab Order: 0808219

Collection Date: 8/12/2008 1:00:00 PM

Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Date Received: 8/13/2008

Lab ID: 0808219-03

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Dimethyl phthalate	ND	10		µg/L	1	8/18/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/18/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/18/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/18/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/18/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/18/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/18/2008
Fluoranthene	ND	10		µg/L	1	8/18/2008
Fluorene	ND	10		µg/L	1	8/18/2008
Hexachlorobenzene	ND	10		µg/L	1	8/18/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/18/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/18/2008
Hexachloroethane	ND	10		µg/L	1	8/18/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/18/2008
Isophorone	ND	10		µg/L	1	8/18/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/18/2008
2-Methylphenol	ND	10		µg/L	1	8/18/2008
3+4-Methylphenol	ND	10		µg/L	1	8/18/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/18/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/18/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/18/2008
Naphthalene	ND	10		µg/L	1	8/18/2008
2-Nitroaniline	ND	10		µg/L	1	8/18/2008
3-Nitroaniline	ND	10		µg/L	1	8/18/2008
4-Nitroaniline	ND	10		µg/L	1	8/18/2008
Nitrobenzene	ND	10		µg/L	1	8/18/2008
2-Nitrophenol	ND	10		µg/L	1	8/18/2008
4-Nitrophenol	ND	10		µg/L	1	8/18/2008
Pentachlorophenol	ND	20		µg/L	1	8/18/2008
Phenanthrene	ND	10		µg/L	1	8/18/2008
Phenol	ND	10		µg/L	1	8/18/2008
Pyrene	ND	10		µg/L	1	8/18/2008
Pyridine	ND	10		µg/L	1	8/18/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/18/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/18/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/18/2008
Surr: 2,4,6-Tribromophenol	79.3	16.6-150		%REC	1	8/18/2008
Surr: 2-Fluorobiphenyl	65.7	19.6-134		%REC	1	8/18/2008
Surr: 2-Fluorophenol	48.1	9.54-113		%REC	1	8/18/2008
Surr: 4-Terphenyl-d14	47.4	22.7-145		%REC	1	8/18/2008
Surr: Nitrobenzene-d5	65.5	14.6-134		%REC	1	8/18/2008
Surr: Phenol-d5	36.6	10.7-80.3		%REC	1	8/18/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 03-Sep-08

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Seep #6**Lab Order:** 0808219**Collection Date:** 8/12/2008 1:00:00 PM**Project:** San Juan River Bluff Seeps Semi-Annual Aug 2**Date Received:** 8/13/2008**Lab ID:** 0808219-03**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/14/2008 6:00:41 AM
Toluene	ND	1.0		µg/L	1	8/14/2008 6:00:41 AM
Ethylbenzene	ND	1.0		µg/L	1	8/14/2008 6:00:41 AM
Methyl tert-butyl ether (MTBE)	5.8	1.5		µg/L	1	8/14/2008 6:00:41 AM
Xylenes, Total	ND	3.0		µg/L	1	8/14/2008 6:00:41 AM
Surr: 4-Bromofluorobenzene	102	80.4-119		%REC	1	8/14/2008 6:00:41 AM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO <sub>3</sub> )	370	20		mg/L CaCO <sub>3</sub>	1	8/19/2008
Carbonate	ND	2.0		mg/L CaCO <sub>3</sub>	1	8/19/2008
Bicarbonate	370	20		mg/L CaCO <sub>3</sub>	1	8/19/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	380	1.0		mg CO <sub>2</sub> /L	1	8/20/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# Hall Environmental Analysis Laboratory, Inc.

Date: 03-Sep-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Seep #6 Dup

Lab Order: 0808219

Collection Date: 8/12/2008 1:05:00 PM

Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Date Received: 8/13/2008

Lab ID: 0808219-04

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: SLB
Fluoride	0.45	0.10		mg/L	1	8/14/2008 12:09:59 AM
Chloride	2500	10		mg/L	100	8/28/2008 3:52:51 PM
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/14/2008 1:02:13 AM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/14/2008 12:09:59 AM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/14/2008 12:09:59 AM
Sulfate	950	50		mg/L	100	8/28/2008 3:52:51 PM

<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
Acenaphthene	ND	10		µg/L	1	8/20/2008
Acenaphthylene	ND	10		µg/L	1	8/20/2008
Aniline	ND	10		µg/L	1	8/20/2008
Anthracene	ND	10		µg/L	1	8/20/2008
Azobenzene	ND	10		µg/L	1	8/20/2008
Benz(a)anthracene	ND	10		µg/L	1	8/20/2008
Benzo(a)pyrene	ND	10		µg/L	1	8/20/2008
Benzo(b)fluoranthene	ND	10		µg/L	1	8/20/2008
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/20/2008
Benzo(k)fluoranthene	ND	10		µg/L	1	8/20/2008
Benzoic acid	ND	20		µg/L	1	8/20/2008
Benzyl alcohol	ND	10		µg/L	1	8/20/2008
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/20/2008
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/20/2008
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/20/2008
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/20/2008
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/20/2008
Butyl benzyl phthalate	ND	10		µg/L	1	8/20/2008
Carbazole	ND	10		µg/L	1	8/20/2008
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/20/2008
4-Chloroaniline	ND	10		µg/L	1	8/20/2008
2-Chloronaphthalene	ND	10		µg/L	1	8/20/2008
2-Chlorophenol	ND	10		µg/L	1	8/20/2008
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/20/2008
Chrysene	ND	10		µg/L	1	8/20/2008
Di-n-butyl phthalate	ND	10		µg/L	1	8/20/2008
Di-n-octyl phthalate	ND	10		µg/L	1	8/20/2008
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/20/2008
Dibenzofuran	ND	10		µg/L	1	8/20/2008
1,2-Dichlorobenzene	ND	10		µg/L	1	8/20/2008
1,3-Dichlorobenzene	ND	10		µg/L	1	8/20/2008
1,4-Dichlorobenzene	ND	10		µg/L	1	8/20/2008
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/20/2008
Diethyl phthalate	ND	10		µg/L	1	8/20/2008

Qualifiers: \* Value exceeds Maximum Contaminant Level  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 MCL Maximum Contaminant Level  
 RL Reporting Limit

## Hall Environmental Analysis Laboratory, Inc.

Date: 03-Sep-08

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Seep #6 Dup

Lab Order: 0808219

Collection Date: 8/12/2008 1:05:00 PM

Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Date Received: 8/13/2008

Lab ID: 0808219-04

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: JDC
Dimethyl phthalate	ND	10		µg/L	1	8/20/2008
2,4-Dichlorophenol	ND	20		µg/L	1	8/20/2008
2,4-Dimethylphenol	ND	10		µg/L	1	8/20/2008
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/20/2008
2,4-Dinitrophenol	ND	20		µg/L	1	8/20/2008
2,4-Dinitrotoluene	ND	10		µg/L	1	8/20/2008
2,6-Dinitrotoluene	ND	10		µg/L	1	8/20/2008
Fluoranthene	ND	10		µg/L	1	8/20/2008
Fluorene	ND	10		µg/L	1	8/20/2008
Hexachlorobenzene	ND	10		µg/L	1	8/20/2008
Hexachlorobutadiene	ND	10		µg/L	1	8/20/2008
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/20/2008
Hexachloroethane	ND	10		µg/L	1	8/20/2008
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/20/2008
Isophorone	ND	10		µg/L	1	8/20/2008
2-Methylnaphthalene	ND	10		µg/L	1	8/20/2008
2-Methylphenol	ND	10		µg/L	1	8/20/2008
3+4-Methylphenol	ND	10		µg/L	1	8/20/2008
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/20/2008
N-Nitrosodimethylamine	ND	10		µg/L	1	8/20/2008
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/20/2008
Naphthalene	ND	10		µg/L	1	8/20/2008
2-Nitroaniline	ND	10		µg/L	1	8/20/2008
3-Nitroaniline	ND	10		µg/L	1	8/20/2008
4-Nitroaniline	ND	10		µg/L	1	8/20/2008
Nitrobenzene	ND	10		µg/L	1	8/20/2008
2-Nitrophenol	ND	10		µg/L	1	8/20/2008
4-Nitrophenol	ND	10		µg/L	1	8/20/2008
Pentachlorophenol	ND	40		µg/L	1	8/20/2008
Phenanthrene	ND	10		µg/L	1	8/20/2008
Phenol	ND	10		µg/L	1	8/20/2008
Pyrene	ND	10		µg/L	1	8/20/2008
Pyridine	ND	10		µg/L	1	8/20/2008
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/20/2008
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/20/2008
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/20/2008
Surr: 2,4,6-Tribromophenol	32.8	16.6-150		%REC	1	8/20/2008
Surr: 2-Fluorobiphenyl	93.4	19.6-134		%REC	1	8/20/2008
Surr: 2-Fluorophenol	39.8	9.54-113		%REC	1	8/20/2008
Surr: 4-Terphenyl-d14	69.0	22.7-145		%REC	1	8/20/2008
Surr: Nitrobenzene-d5	87.9	14.6-134		%REC	1	8/20/2008
Surr: Phenol-d5	54.9	10.7-80.3		%REC	1	8/20/2008

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 03-Sep-08

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Seep #6 Dup**Lab Order:** 0808219**Collection Date:** 8/12/2008 1:05:00 PM**Project:** San Juan River Bluff Seeps Semi-Annual Aug 2**Date Received:** 8/13/2008**Lab ID:** 0808219-04**Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8270C: SEMIVOLATILES</b>						Analyst: JDC
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/14/2008 6:29:37 AM
Toluene	ND	1.0		µg/L	1	8/14/2008 6:29:37 AM
Ethylbenzene	ND	1.0		µg/L	1	8/14/2008 6:29:37 AM
Methyl tert-butyl ether (MTBE)	6.0	1.5		µg/L	1	8/14/2008 6:29:37 AM
Xylenes, Total	ND	3.0		µg/L	1	8/14/2008 6:29:37 AM
Surr: 4-Bromofluorobenzene	98.5	80.4-119		%REC	1	8/14/2008 6:29:37 AM
<b>SM 2320B: ALKALINITY</b>						Analyst: TAF
Alkalinity, Total (As CaCO <sub>3</sub> )	370	20		mg/L CaCO <sub>3</sub>	1	8/19/2008
Carbonate	ND	2.0		mg/L CaCO <sub>3</sub>	1	8/19/2008
Bicarbonate	370	20		mg/L CaCO <sub>3</sub>	1	8/19/2008
<b>TOTAL CARBON DIOXIDE CALCULATION</b>						Analyst: TAF
Total Carbon Dioxide	380	1.0		mg CO <sub>2</sub> /L	1	8/20/2008

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**Hall Environmental Analysis Laboratory, Inc.**

Date: 03-Sep-08

**CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Trip Blau**Lab Order:** 0808219**Collection Date:****Project:** San Juan River Bluff Seeps Semi-Annual Aug 2**Date Received:** 8/13/2008**Lab ID:** 0808219-05**Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>						Analyst: HL
Benzene	ND	1.0		µg/L	1	8/14/2008 7:58:59 AM
Toluene	ND	1.0		µg/L	1	8/14/2008 7:58:59 AM
Ethylbenzene	ND	1.0		µg/L	1	8/14/2008 7:58:59 AM
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	8/14/2008 7:58:59 AM
Xylenes, Total	ND	3.0		µg/L	1	8/14/2008 7:58:59 AM
Surr: 4-Bromofluorobenzene	98.0	80.4-119		%REC	1	8/14/2008 7:58:59 AM

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level  
E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
MCL Maximum Contaminant Level  
RL Reporting Limit

Lab Order: 0808219

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff Seeps Semi-

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808219-01A	Seep #1	8/12/2008 2:00:00 PM	Aqueous	EPA Method 8260: Volatiles Short List	R29757		8/14/2008
0808219-01B				EPA Method 8270C: Semivolatiles	16775	8/14/2008	8/18/2008
				EPA Method 8270C: Semivolatiles	16818	8/19/2008	8/20/2008
0808219-01C				Carbon Dioxide	R29846		8/20/2008
				EPA Method 300.0: Anions	R29778		8/13/2008
				EPA Method 300.0: Anions	R29778		8/13/2008
				EPA Method 300.0: Anions	R30012		8/28/2008
				SM 2320B: Alkalinity	R29839		8/19/2008
0808219-02A	Seep #3	8/12/2008 2:10:00 PM		EPA Method 8260: Volatiles Short List	R29757		8/14/2008
0808219-02B				EPA Method 8270C: Semivolatiles	16775	8/14/2008	8/18/2008
0808219-02C				Carbon Dioxide	R29846		8/20/2008
				EPA Method 300.0: Anions	R29778		8/13/2008
				EPA Method 300.0: Anions	R29778		8/13/2008
				EPA Method 300.0: Anions	R30012		8/28/2008
				SM 2320B: Alkalinity	R29839		8/19/2008
0808219-03A	Seep #6	8/12/2008 1:00:00 PM		EPA Method 8260: Volatiles Short List	R29757		8/14/2008
0808219-03B				EPA Method 8270C: Semivolatiles	16775	8/14/2008	8/18/2008
0808219-03C				Carbon Dioxide	R29846		8/20/2008
				EPA Method 300.0: Anions	R29778		8/13/2008
				EPA Method 300.0: Anions	R29778		8/13/2008
				EPA Method 300.0: Anions	R30012		8/28/2008
				SM 2320B: Alkalinity	R29839		8/19/2008
0808219-04A	Seep #6 Dup	8/12/2008 1:05:00 PM		EPA Method 8260: Volatiles Short List	R29757		8/14/2008
0808219-04B				EPA Method 8270C: Semivolatiles	16775	8/14/2008	8/18/2008
				EPA Method 8270C: Semivolatiles	16818	8/19/2008	8/20/2008

# Hall Environmental Analysis Laboratory, Inc.

03-Sep-08

Lab Order: 0808219

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff Seeps Semi-

## DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0808219-04C	Seep #6 Dup	8/12/2008 1:05:00 PM	Aqueous	Carbon Dioxide	R29846		8/20/2008
				EPA Method 300.0: Anions	R29778		8/14/2008
				EPA Method 300.0: Anions	R29778		8/14/2008
				EPA Method 300.0: Anions	R30012		8/28/2008
				SM 2320B: Alkalinity	R29839		8/19/2008
0808219-05A	Trip Blan		Trip Blank	EPA Method 8260: Volatiles Short List	R29757		8/14/2008



## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Work Order: 0808219

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: EPA Method 300.0: Anions</b>									
<b>Sample ID: 0808219-04CMSD</b>		<b>MSD</b>				<b>Batch ID: R29778</b>	<b>Analysis Date: 8/14/2008 1:37:03 AM</b>		
Fluoride	0.9702	mg/L	0.10	105	65.1	121	2.05	20	
Nitrogen, Nitrate (As N)	2.548	mg/L	0.10	102	83.8	112	1.66	20	
Phosphorus, Orthophosphate (As P)	4.524	mg/L	0.50	90.5	77.6	118	19.4	20	
<b>Sample ID: 0808219-04CMSD</b>		<b>MSD</b>				<b>Batch ID: R30012</b>	<b>Analysis Date: 8/28/2008 5:02:28 PM</b>		
Fluoride	0.7838	mg/L	0.10	67.7	65.1	121	13.2	20	
Nitrogen, Nitrate (As N)	2.274	mg/L	0.10	91.0	83.8	112	2.22	20	
<b>Sample ID: MB</b>		<b>MBLK</b>				<b>Batch ID: R29778</b>	<b>Analysis Date: 8/13/2008 11:06:31 AM</b>		
Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						
<b>Sample ID: MB</b>		<b>MBLK</b>				<b>Batch ID: R30012</b>	<b>Analysis Date: 8/28/2008 9:47:15 AM</b>		
Fluoride	ND	mg/L	0.10						
Chloride	ND	mg/L	0.10						
Nitrogen, Nitrite (As N)	ND	mg/L	0.10						
Nitrogen, Nitrate (As N)	ND	mg/L	0.10						
Phosphorus, Orthophosphate (As P)	ND	mg/L	0.50						
Sulfate	ND	mg/L	0.50						
<b>Sample ID: LCS</b>		<b>LCS</b>				<b>Batch ID: R29778</b>	<b>Analysis Date: 8/13/2008 11:23:56 AM</b>		
Fluoride	0.5481	mg/L	0.10	110	90	110			
Chloride	5.047	mg/L	0.10	101	90	110			
Nitrogen, Nitrite (As N)	1.023	mg/L	0.10	102	90	110			
Nitrogen, Nitrate (As N)	2.549	mg/L	0.10	102	90	110			
Phosphorus, Orthophosphate (As P)	5.114	mg/L	0.50	102	90	110			
Sulfate	10.50	mg/L	0.50	105	90	110			
<b>Sample ID: LCS</b>		<b>LCS</b>				<b>Batch ID: R30012</b>	<b>Analysis Date: 8/28/2008 10:04:39 AM</b>		
Fluoride	0.5088	mg/L	0.10	102	90	110			
Chloride	4.854	mg/L	0.10	97.1	90	110			
Nitrogen, Nitrite (As N)	0.9857	mg/L	0.10	98.6	90	110			
Nitrogen, Nitrate (As N)	2.504	mg/L	0.10	100	90	110			
Phosphorus, Orthophosphate (As P)	4.890	mg/L	0.50	97.8	90	110			
Sulfate	10.09	mg/L	0.50	101	90	110			
<b>Sample ID: 0808219-04CMS</b>		<b>MS</b>				<b>Batch ID: R29778</b>	<b>Analysis Date: 8/14/2008 1:19:38 AM</b>		
Fluoride	0.9504	mg/L	0.10	101	65.1	121			
Nitrogen, Nitrate (As N)	2.591	mg/L	0.10	104	83.8	112			
Phosphorus, Orthophosphate (As P)	3.722	mg/L	0.50	74.4	77.6	118			S
<b>Sample ID: 0808219-04CMS</b>		<b>MS</b>				<b>Batch ID: R30012</b>	<b>Analysis Date: 8/28/2008 4:45:04 PM</b>		
Fluoride	0.6866	mg/L	0.10	48.3	65.1	121			S
Nitrogen, Nitrate (As N)	2.224	mg/L	0.10	89.0	83.8	112			

## Qualifiers:

E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Work Order: 0808219

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
<b>Method: SM 2320B: Alkalinity</b>									
Sample ID: MB		MBLK			Batch ID: R29839	Analysis Date:		8/19/2008	
Alkalinity, Total (As CaCO3)	ND	mg/L CaC	20						
Carbonate	ND	mg/L CaC	2.0						
Bicarbonate	ND	mg/L CaC	20						
Sample ID: LCS		LCS			Batch ID: R29839	Analysis Date:		8/19/2008	
Alkalinity, Total (As CaCO3)	82.00	mg/L CaC	20	100	80	120			
<b>Method: EPA Method 8260: Volatiles Short List</b>									
Sample ID: 5ml rb		MBLK			Batch ID: R29757	Analysis Date:		8/13/2008 12:36:05 PM	
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 4-Bromofluorobenzene	9.956	µg/L	0	99.6	80.4	119			
Sample ID: b6		MBLK			Batch ID: R29757	Analysis Date:		8/14/2008 12:44:10 AM	
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 4-Bromofluorobenzene	10.42	µg/L	0	104	80.4	119			
Sample ID: 100ng lcs		LCS			Batch ID: R29757	Analysis Date:		8/13/2008 2:03:00 PM	
Benzene	19.87	µg/L	1.0	99.3	86.8	120			
Toluene	18.94	µg/L	1.0	94.7	64.1	127			
Surr: 4-Bromofluorobenzene	10.22	µg/L	0	102	80.4	119			
Sample ID: 100ng lcs		LCS			Batch ID: R29757	Analysis Date:		8/14/2008 1:41:39 AM	
Benzene	19.70	µg/L	1.0	98.5	86.8	120			
Toluene	19.35	µg/L	1.0	96.8	64.1	127			
Surr: 4-Bromofluorobenzene	10.39	µg/L	0	104	80.4	119			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Work Order: 0808219

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16775

MBLK

Batch ID: 16775 Analysis Date: 8/15/2008

Acenaphthene	ND	µg/L	10
Acenaphthylene	ND	µg/L	10
Aniline	ND	µg/L	10
Anthracene	ND	µg/L	10
Azobenzene	ND	µg/L	10
Benz(a)anthracene	ND	µg/L	10
Benzo(a)pyrene	ND	µg/L	10
Benzo(b)fluoranthene	ND	µg/L	10
Benzo(g,h,i)perylene	ND	µg/L	10
Benzo(k)fluoranthene	ND	µg/L	10
Benzoic acid	ND	µg/L	80
Benzyl alcohol	ND	µg/L	10
Bis(2-chloroethoxy)methane	ND	µg/L	10
Bis(2-chloroethyl)ether	ND	µg/L	10
Bis(2-chloroisopropyl)ether	ND	µg/L	10
Bis(2-ethylhexyl)phthalate	ND	µg/L	10
4-Bromophenyl phenyl ether	ND	µg/L	10
Butyl benzyl phthalate	ND	µg/L	10
Carbazole	ND	µg/L	10
Chloro-3-methylphenol	ND	µg/L	10
4-Chloroaniline	ND	µg/L	10
2-Chloronaphthalene	ND	µg/L	10
2-Chlorophenol	ND	µg/L	10
4-Chlorophenyl phenyl ether	ND	µg/L	10
Chrysene	ND	µg/L	10
Di-n-butyl phthalate	ND	µg/L	10
Di-n-octyl phthalate	ND	µg/L	10
Dibenz(a,h)anthracene	ND	µg/L	10
Dibenzofuran	ND	µg/L	10
1,2-Dichlorobenzene	ND	µg/L	10
1,3-Dichlorobenzene	ND	µg/L	10
1,4-Dichlorobenzene	ND	µg/L	10
3,3'-Dichlorobenzidine	ND	µg/L	10
Diethyl phthalate	ND	µg/L	10
Dimethyl phthalate	ND	µg/L	10
2,4-Dichlorophenol	ND	µg/L	20
2,4-Dimethylphenol	ND	µg/L	10
4,6-Dinitro-2-methylphenol	ND	µg/L	20
2,4-Dinitrophenol	ND	µg/L	20
2,4-Dinitrotoluene	ND	µg/L	10
2,6-Dinitrotoluene	ND	µg/L	10
Fluoranthene	ND	µg/L	10
Fluorene	ND	µg/L	10
Hexachlorobenzene	ND	µg/L	10

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Work Order: 0808219

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16775

MBLK

Batch ID: 16775 Analysis Date: 8/15/2008

Hexachlorobutadiene	ND	µg/L	10						
Hexachlorocyclopentadiene	ND	µg/L	10						
Hexachloroethane	ND	µg/L	10						
Indeno(1,2,3-cd)pyrene	ND	µg/L	10						
Isophorone	ND	µg/L	10						
2-Methylnaphthalene	ND	µg/L	10						
2-Methylphenol	ND	µg/L	10						
3+4-Methylphenol	ND	µg/L	10						
N-Nitrosodi-n-propylamine	ND	µg/L	10						
N-Nitrosodimethylamine	ND	µg/L	10						
N-Nitrosodiphenylamine	ND	µg/L	10						
Naphthalene	ND	µg/L	10						
2-Nitroaniline	ND	µg/L	10						
3-Nitroaniline	ND	µg/L	10						
4-Nitroaniline	ND	µg/L	10						
Nitrobenzene	ND	µg/L	10						
2-Nitrophenol	ND	µg/L	10						
4-Nitrophenol	ND	µg/L	10						
Pentachlorophenol	ND	µg/L	20						
Phenanthrene	ND	µg/L	10						
Phenol	ND	µg/L	10						
Pyrene	ND	µg/L	10						
Pyridine	ND	µg/L	10						
1,2,4-Trichlorobenzene	ND	µg/L	10						
2,4,5-Trichlorophenol	ND	µg/L	10						
2,4,6-Trichlorophenol	ND	µg/L	10						
Surr: 2,4,6-Tribromophenol	137.3	µg/L	0	68.7	16.6	160			
Surr: 2-Fluorobiphenyl	72.32	µg/L	0	72.3	19.6	134			
Surr: 2-Fluorophenol	107.4	µg/L	0	53.7	9.54	113			
Surr: 4-Terphenyl-d14	68.48	µg/L	0	68.5	22.7	145			
Surr: Nitrobenzene-d5	73.84	µg/L	0	73.8	14.6	134			
Surr: Phenol-d5	82.80	µg/L	0	41.4	10.7	80.3			

Sample ID: mb-16818

MBLK

Batch ID: 16818 Analysis Date: 8/20/2008

Acenaphthene	ND	µg/L	10						
Acenaphthylene	ND	µg/L	10						
Aniline	ND	µg/L	10						
Anthracene	ND	µg/L	10						
Azobenzene	ND	µg/L	10						
Benz(a)anthracene	ND	µg/L	10						
Benzo(a)pyrene	ND	µg/L	10						
Benzo(b)fluoranthene	ND	µg/L	10						
Benzo(g,h,i)perylene	ND	µg/L	10						
Benzo(k)fluoranthene	ND	µg/L	10						
Benzoic acid	ND	µg/L	20						

## Qualifiers:

E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Work Order: 0808219

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16818

MBLK

Batch ID: 16818 Analysis Date: 8/20/2008

Benzyl alcohol	ND	µg/L	10
Bis(2-chloroethoxy)methane	ND	µg/L	10
Bis(2-chloroethyl)ether	ND	µg/L	10
Bis(2-chloroisopropyl)ether	ND	µg/L	10
Bis(2-ethylhexyl)phthalate	ND	µg/L	10
4-Bromophenyl phenyl ether	ND	µg/L	10
Butyl benzyl phthalate	ND	µg/L	10
Carbazole	ND	µg/L	10
4-Chloro-3-methylphenol	ND	µg/L	10
4-Chloroaniline	ND	µg/L	10
2-Chloronaphthalene	ND	µg/L	10
2-Chlorophenol	ND	µg/L	10
4-Chlorophenyl phenyl ether	ND	µg/L	10
Chrysene	ND	µg/L	10
Di-n-butyl phthalate	ND	µg/L	10
Di-n-octyl phthalate	ND	µg/L	10
Dibenz(a,h)anthracene	ND	µg/L	10
Dibenzofuran	ND	µg/L	10
1,2-Dichlorobenzene	ND	µg/L	10
1,3-Dichlorobenzene	ND	µg/L	10
1,4-Dichlorobenzene	ND	µg/L	10
3,3'-Dichlorobenzidine	ND	µg/L	10
Diethyl phthalate	ND	µg/L	10
Dimethyl phthalate	ND	µg/L	10
2,4-Dichlorophenol	ND	µg/L	20
2,4-Dimethylphenol	ND	µg/L	10
4,6-Dinitro-2-methylphenol	ND	µg/L	20
2,4-Dinitrophenol	ND	µg/L	20
2,4-Dinitrotoluene	ND	µg/L	10
2,6-Dinitrotoluene	ND	µg/L	10
Fluoranthene	ND	µg/L	10
Fluorene	ND	µg/L	10
Hexachlorobenzene	ND	µg/L	10
Hexachlorobutadiene	ND	µg/L	10
Hexachlorocyclopentadiene	ND	µg/L	10
Hexachloroethane	ND	µg/L	10
Indeno(1,2,3-cd)pyrene	ND	µg/L	10
Isophorone	ND	µg/L	10
2-Methylnaphthalene	ND	µg/L	10
2-Methylphenol	ND	µg/L	10
3+4-Methylphenol	ND	µg/L	10
N-Nitrosodi-n-propylamine	ND	µg/L	10
N-Nitrosodimethylamine	ND	µg/L	10
N-Nitrosodiphenylamine	ND	µg/L	10

## Qualifiers:

Value above quantitation range  
 Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Work Order: 0808219

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: mb-16818 MBLK Batch ID: 16818 Analysis Date: 8/20/2008

Naphthalene	ND	µg/L	10						
2-Nitroaniline	ND	µg/L	10						
3-Nitroaniline	ND	µg/L	10						
4-Nitroaniline	ND	µg/L	10						
Nitrobenzene	ND	µg/L	10						
2-Nitrophenol	ND	µg/L	10						
4-Nitrophenol	ND	µg/L	10						
Pentachlorophenol	ND	µg/L	40						
Phenanthrene	ND	µg/L	10						
Phenol	ND	µg/L	10						
Pyrene	ND	µg/L	10						
Pyridine	ND	µg/L	10						
1,2,4-Trichlorobenzene	ND	µg/L	10						
2,4,5-Trichlorophenol	ND	µg/L	10						
2,4,6-Trichlorophenol	ND	µg/L	10						
Surr: 2,4,6-Tribromophenol	133.0	µg/L	0	66.5	16.6	150			
Surr: 2-Fluorobiphenyl	82.46	µg/L	0	82.5	19.6	134			
Surr: 2-Fluorophenol	133.0	µg/L	0	66.5	9.54	113			
Surr: 4-Terphenyl-d14	69.20	µg/L	0	69.2	22.7	145			
Surr: Nitrobenzene-d5	77.38	µg/L	0	77.4	14.6	134			
Surr: Phenol-d5	109.6	µg/L	0	54.8	10.7	80.3			

Sample ID: lcs-16775 LCS Batch ID: 16775 Analysis Date: 8/15/2008

Acenaphthene	53.96	µg/L	10	54.0	11	123			
4-Chloro-3-methylphenol	102.5	µg/L	10	51.3	15.4	119			
2-Chlorophenol	99.08	µg/L	10	49.5	12.2	122			
1,4-Dichlorobenzene	46.34	µg/L	10	46.3	16.9	100			
2,4-Dinitrotoluene	51.28	µg/L	10	51.3	13	138			
N-Nitrosodi-n-propylamine	57.62	µg/L	10	57.6	9.93	122			
4-Nitrophenol	42.30	µg/L	10	21.2	12.5	87.4			
Pentachlorophenol	88.82	µg/L	20	40.4	3.55	114			
Phenol	58.08	µg/L	10	29.0	7.53	73.1			
Pyrene	53.76	µg/L	10	53.8	12.6	140			
1,2,4-Trichlorobenzene	48.08	µg/L	10	48.1	17.4	98.7			
Surr: 2,4,6-Tribromophenol	101.1	µg/L	0	50.5	16.6	150			
Surr: 2-Fluorobiphenyl	54.24	µg/L	0	54.2	19.6	134			
Surr: 2-Fluorophenol	75.52	µg/L	0	37.8	9.54	113			
Surr: 4-Terphenyl-d14	47.24	µg/L	0	47.2	22.7	145			
Surr: Nitrobenzene-d5	58.64	µg/L	0	58.6	14.6	134			
Surr: Phenol-d5	59.76	µg/L	0	29.9	10.7	80.3			

Sample ID: lcs-16818 LCS Batch ID: 16818 Analysis Date: 8/20/2008

Acenaphthene	60.60	µg/L	10	60.6	11	123			
4-Chloro-3-methylphenol	128.5	µg/L	10	63.4	15.4	119			
2-Chlorophenol	124.8	µg/L	10	61.4	12.2	122			
1,4-Dichlorobenzene	58.90	µg/L	10	58.9	16.9	100			

## Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
 Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Work Order: 0808219

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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## Method: EPA Method 8270C: Semivolatiles

Sample ID: lcs-16818 LCS Batch ID: 16818 Analysis Date: 8/20/2008

2,4-Dinitrotoluene	57.62	µg/L	10	57.6	13	138			
N-Nitrosodi-n-propylamine	70.54	µg/L	10	70.5	9.93	122			
4-Nitrophenol	71.38	µg/L	10	35.7	12.5	87.4			
Pentachlorophenol	119.9	µg/L	40	60.0	3.55	114			
Phenol	73.12	µg/L	10	36.6	7.53	73.1			
Pyrene	63.16	µg/L	10	63.2	12.6	140			
1,2,4-Trichlorobenzene	60.56	µg/L	10	60.6	17.4	98.7			
Surr: 2,4,6-Tribromophenol	134.4	µg/L	0	67.2	16.6	150			
Surr: 2-Fluorobiphenyl	87.68	µg/L	0	87.7	19.6	134			
Surr: 2-Fluorophenol	126.1	µg/L	0	63.0	9.54	113			
Surr: 4-Terphenyl-d14	75.24	µg/L	0	75.2	22.7	145			
Surr: Nitrobenzene-d5	84.34	µg/L	0	84.3	14.6	134			
Surr: Phenol-d5	109.7	µg/L	0	54.8	10.7	80.3			

Sample ID: lcsd-16775 LCSD Batch ID: 16775 Analysis Date: 8/15/2008

Acenaphthene	56.36	µg/L	10	56.4	11	123	4.35	30.5	
4-Chloro-3-methylphenol	102.8	µg/L	10	51.4	15.4	119	0.292	28.6	
2-Chlorophenol	99.68	µg/L	10	49.8	12.2	122	0.604	107	
1,4-Dichlorobenzene	48.82	µg/L	10	48.8	16.9	100	5.21	62.1	
2,4-Dinitrotoluene	51.78	µg/L	10	51.8	13	138	0.970	14.7	
N-Nitrosodi-n-propylamine	61.42	µg/L	10	61.4	9.93	122	6.38	30.3	
4-Nitrophenol	35.04	µg/L	10	17.5	12.5	87.4	18.8	36.3	
Pentachlorophenol	84.90	µg/L	20	38.4	3.55	114	4.51	49	
Phenol	60.90	µg/L	10	30.4	7.53	73.1	4.74	52.4	
Pyrene	59.88	µg/L	10	59.9	12.6	140	10.8	16.3	
1,2,4-Trichlorobenzene	52.10	µg/L	10	52.1	17.4	98.7	8.03	36.4	
Surr: 2,4,6-Tribromophenol	101.1	µg/L	0	50.6	16.6	150	0	0	
Surr: 2-Fluorobiphenyl	60.64	µg/L	0	60.6	19.6	134	0	0	
Surr: 2-Fluorophenol	75.88	µg/L	0	37.9	9.54	113	0	0	
Surr: 4-Terphenyl-d14	50.00	µg/L	0	50.0	22.7	145	0	0	
Surr: Nitrobenzene-d5	62.76	µg/L	0	62.8	14.6	134	0	0	
Surr: Phenol-d5	65.10	µg/L	0	32.6	10.7	80.3	0	0	

Sample ID: lcsd-16818 LCSD Batch ID: 16818 Analysis Date: 8/20/2008

Acenaphthene	59.20	µg/L	10	59.2	11	123	2.34	30.5	
4-Chloro-3-methylphenol	120.1	µg/L	10	59.2	15.4	119	6.76	28.6	
2-Chlorophenol	119.6	µg/L	10	58.8	12.2	122	4.21	107	
1,4-Dichlorobenzene	57.08	µg/L	10	57.1	16.9	100	3.14	62.1	
2,4-Dinitrotoluene	56.86	µg/L	10	56.9	13	138	1.33	14.7	
N-Nitrosodi-n-propylamine	68.64	µg/L	10	68.6	9.93	122	2.73	30.3	
4-Nitrophenol	69.00	µg/L	10	34.5	12.5	87.4	3.39	36.3	
Pentachlorophenol	120.5	µg/L	40	60.3	3.55	114	0.516	49	
Phenol	69.24	µg/L	10	34.6	7.53	73.1	5.45	52.4	
Pyrene	59.88	µg/L	10	59.9	12.6	140	5.33	16.3	
1,2,4-Trichlorobenzene	56.88	µg/L	10	56.9	17.4	98.7	6.27	36.4	
Surr: 2,4,6-Tribromophenol	135.5	µg/L	0	67.7	16.6	150	0	0	

## Qualifiers:

E Value above quantitation range  
 J Analyte detected below quantitation limits  
 R RPD outside accepted recovery limits  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 S Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Inc.  
Project: San Juan River Bluff Seeps Semi-Annual Aug 2

Work Order: 0808219

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8270C: Semivolatiles

Sample ID: lcsd-16818

LCSD

Batch ID: 16818

Analysis Date:

8/20/2008

Surr: 2-Fluorobiphenyl	83.20	µg/L	0	83.2	19.6	134	0	0	
Surr: 2-Fluorophenol	122.5	µg/L	0	61.2	9.54	113	0	0	
Surr: 4-Terphenyl-d14	71.42	µg/L	0	71.4	22.7	145	0	0	
Surr: Nitrobenzene-d5	82.30	µg/L	0	82.3	14.6	134	0	0	
Surr: Phenol-d5	105.4	µg/L	0	52.7	10.7	80.3	0	0	

## Qualifiers:

E Value above quantitation range  
J Analyte detected below quantitation limits  
R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
S Spike recovery outside accepted recovery limits



# Hall Environmental Analysis Laboratory, Inc.

## Sample Receipt Checklist

Client Name WESTERN REFINING SOUT

Date Received:

8/13/2008

Work Order Number 0808219

Received by: ARS

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water - Preservation labels on bottle and cap match?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	

Container/Temp Blank temperature?

4°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_



# Chain-of-Custody Record

Client: Western Refining (Blmfield)

Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax #: 505-632-3911

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

Project Manager:

Sampler: Cindy/ Bob

OTC 7-10-08

Sample: Trip Blank

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

SAN JUAN River Bluff

Seeps Semi-Annual Aug. 2008

Project #:

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

### Analysis Request

BTEX + MTBE + TMB's (8021)	
BTEX + MTBE + TPH (Gas only)	
TPH Method 8015B (Gas/Diesel)	
TPH (Method 418.1)	
EDB (Method 504.1)	
EDC (Method 8260)	
8310 (PNA or PAH)	
Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	X
8081 Pesticides / 8082 PCB's	
8260B (VOA) BTEX, MTBE only	X
8270 (Semi-VOA)	X
<del>TPH</del> <u>CO<sub>2</sub>, ALKALINITY</u>	X
<del>TPH</del> <u>Heavy Metals</u>	X
Air Bubbles (Y or N)	

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
8-12-08	1pm	Seep #6	3-VOA	HCl	-3
/	/	/	250ml	H <sub>2</sub> SO <sub>4</sub>	-3
/	/	/	Amber		-3
/	/	/	500 ml		-3
/	/	/	<del>250ml</del>	<del>H<sub>2</sub>SO<sub>4</sub></del>	
8-12-08	105pm	Seep #6 Dup	3-VOA	HCl	-4
/	/	/	250 ml	H <sub>2</sub> SO <sub>4</sub>	-4
/	/	/	Amber		-4
/	/	/	500 ml		-4
/	/	/	<del>250ml</del>	<del>H<sub>2</sub>SO<sub>4</sub></del>	
/	/	/	Trip Blank		-5

Date:	Time:	Relinquished by:	Received by:
8-12-08	239pm	<u>Cindy Hurtado</u>	<u>[Signature]</u>
Date:	Time:	Relinquished by:	Received by:
			9:55 8/13/08

Remarks: