GW-001

2009 AGWMR

Date
4/13/2010

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Western Refining

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April 13, 2010

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Environmental Bureau
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Santa Fe, NM 87505

**RE: Corrective Measures Study and Corrective Measures Implementation (Site Investigation and Abatement Plan)
2009 Groundwater Remediation and Monitoring Annual Report
Western Refining Southwest, Inc. - Bloomfield Refinery
EPA ID# NMD089416416
GW – 001**

Dear Hope and Carl:

Western Refining Southwest Inc. - Bloomfield Refinery submits the 2009 Annual Groundwater Report as required by NMED and OCD directives. This report summarizes all groundwater monitoring activities that occurred in 2009.

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
Allen Hains, Western Refining – El Paso

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 2009. Sampling and analysis followed the guidelines from the *Facility-Wide Groundwater Monitoring Plan December 2007(Revised May 2008)*.

Groundwater Measurements

All facility monitoring wells, recovery wells, observation and collection wells were measured for groundwater elevation in February, April, August, and November. 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.

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 December 2007(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 2009. Analytical results indicate that impacted groundwater from the refinery has not impacted the river.

Tank #33 Effluent

Tank #33 effluent was sampled and analyzed for BTEX and MTBE (EPA Method 8260B) on a monthly basis throughout 2009. Benzene results did not surpass toxicity standards at Tk #33 effluent in 2009.

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. Bi-weekly inspections continue to confirm that the vast majority of the fluids in the outfalls are from precipitation events.

Recommendations

Western Refining indefinitely suspended refining operations at the Bloomfield Refinery on November 23, 2009. The crude unloading and product loading racks, storage tanks and other supporting equipment remain in operation. Future monitoring and remedial action will follow the *Facility-Wide Groundwater Monitoring Plan (Revised May 2008)* or the most updated plan.

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Section 1.0 Introduction

INTRODUCTION

2009 Groundwater Remediation and Monitoring Annual Report

Owner:	Western Refining, Inc. 123 W. Mills Ave., Suite 200 El Paso, TX 79901	(parent corporation)
Operator:	Western Refining Southwest, Inc. P.O. Box 159 Bloomfield, New Mexico 87413	(postal address)
	Western Refining Southwest, Inc. #50 Rd 4990 Bloomfield, New Mexico 87413	(physical address)
Facility Name:	Bloomfield Refinery #50 Rd 4990 Bloomfield, New Mexico 87413	(physical address)
Facility Status	Corrective Action/Compliance	
US EPA ID	NMD089416416	
SIC Code	2911	
Submittal Date:	April 2010	

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 was operated by Western Refining Southwest, Inc. The historical 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. Western Refining indefinitely suspended refining operations at the Bloomfield Refinery on November 23, 2009. The crude unloading and product loading racks, storage tanks and other supporting equipment remain in operation.

HISTORY OF FACILITY MODIFICATIONS AND IMPROVEMENTS

Previous Owner's Activities

Local entrepreneur, Kimball Campbell, constructed the crude topping unit that eventually became the Bloomfield Refinery 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 recoverd 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 Hydrodesulferization (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 colection. 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 Naciemento 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.

2009
In March monitoring wells were installed around the Aeration Lagoons to satisfy Group #1 RCRA site investigation requirements. Group #3 site investigation activities began in April. This group includes SWMU #4, SWMU #5, AOC #22, AOC, #23, AOC #24, AOC #25, and AOC #26.
Western Refining indefinitely suspended refining operations at the Bloomfield Refinery on November 23, 2009. The crude unloading and product loading racks, storage tanks and other supporting equipment remain in operation. Guidelines from the *Facility-Wide Groundwater Monitoring Plan December 2007(Revised May 2008)* will continue to be followed.

Section 2.0 Scope of Activities

2.0 Scope of Activities

Western Refining indefinitely suspended refining operations at the Bloomfield Refinery on November 23, 2009. The crude unloading and product loading racks, storage tanks and other supporting equipment remain in operation. Guidelines from the *Facility-Wide Groundwater Monitoring Plan December 2007(Revised May 2008)* will continue to be followed.

The following is a summary of the activities conducted in 2009.

Below-grade Testing
Throughout 2009, pursuant to conditions of approval stated in Discharge Permit GW-001 (regulated by the Oil Conservation Division), Bloomfield Refinery personnel conducted annual below-grade sump testing and underground process/wastewater line testing.

In June 2009, All water-draw sumps located in the Tank Farm were cleaned out with a vacuum truck, visually inspected, and hydrostatically tested to insure integrity. All sumps passed the hydrostatic test, and double-walled steel (DW Steel) sumps were also inspected through the leak detection port. No evidence of moisture was seen.

Visual inspection of Sump #37 – a DW steel sump – at Tank #35 indicated pitting and metal loss. Even though the sump passed the hydrostatic test and continued to pass the leak detection port inspection, Bloomfield Refinery management (with OCD approval) opted to replace the sump (in kind) at the recommendation of the Plant Inspector before metal failure could occur.

Beginning the week of April 28, 2009, all sewer boxes within the facility were cleaned out with a vacuum truck and inspected.

From June 2009 to October 2009, 4668 feet of underground piping was hydrostatically tested at Bloomfield Refinery. The piping was located in the Poly Unit, the Fluid Catalytic Cracking Unit (FCCU), the Treater unit, and effluent transfer to the Injection Well.

Below-grade testing spreadsheets are located in Section 13.0

North Boundary Barrier Wall
Installation of the North Boundary Barrier Wall and Collection System was completed by late April 2005. A biweekly fluid measurement plan was established in August 2005 and continued throughout 2009. This plan requires 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.

From April 2005 to March 31, 2008, a vacuum truck was used to remove fluids from the collection and observation wells on a 3 times per week basis. Since April 2008, fluid removal from the observation and collection wells along Hammond Ditch has consisted of using a hand bailer to periodically pull separate phase hydrocarbon from OW 0 +60, OW 1+50, OW 3+85, OW 11+15, MW #45, and MW #47. All purged water was collected in a 55-gallon drum and disposed of through the refinery wastewater system.

Semi-Annual sample collection began during the week of April 6, 2009. Samples were collected from observation wells and analyzed for benzene, toluene, ethylbenzene, xylene (BTEX), and MTBE using EPA Method 8260B as well as Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) using EPA Method 8015B. Collection well samples were analyzed for BTEX, MTBE (EPA Method 8260B) and DRO (8015B). Field measurements of pH, temperature, electrical conductivity (E.C.) and total dissolved solids (TDS) were also collected.

Annual sampling occurred the week of August 17, 2009. Observation well samples were analyzed for BTEX, MTBE (EPA Method 8260B),and DRO/GRO(8015B). Collection well samples were analyzed for BTEX, MTBE (EPA Method 8260) and DRO (8015B). Field measurements of pH, temperature, E.C., and TDS 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.

Measured depth-to-groundwater tables, analytical results, and field measurements are summarized in Appendix A – Tabs 1-16.

Seeps/Sump Wells
A bi-weekly visual inspection of Seeps 1-9 and the San Juan River Bluff occurred throughout 2009.

During the week of April 6, 2009 semi-annual samples were collected from Seeps 1, 3, 6, 8, and 9 and analyzed for BTEX (EPA 8260B), SVOCs (EPA 8270), Alkalinity/Caron Dioxide (SM2320B), and general chemistry (EPA 300.0). The analytical laboratory analyzed for combined Nitrate (as N) + Nitrite (as N) to meet holdtime in Seeps 6, 8, and 9. Field measurements of pH, temperature, E.C., and TDS were also recorded.

During the week of August 17, 2009, samples were collected from Seeps 1, 3, and 6 and analyzed for BTEX and MTBE (EPA 8260B), SVOCs (EPA 8270), Alkalinity/Caron Dioxide (SM2320B), and general chemistry (EPA 300.0). Field measurements of pH, temperature, E.C., and TDS were also collected.

Analytical results can be found in Section 8.0 - Tab 8.0. Field measurements can be found in Section 8.0 – Tab 3.0.

A bi-weekly fluid measurement program was utilized throughout 2009 to monitor the sump wells. Measured depth to groundwater tables can be found in Section 8.0 - Tab 2.0.

Groundwater Monitoring

Tank #33 effluent was sampled and analyzed for BTEX and MTBE (EPA Method 8260B) on a monthly basis throughout 2009. Analytical results are in Section 8.0 - Tab 9.0.

The facility-wide semi-annual monitoring event occurred during the week of April 6, 2009. 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 8260B), Dissolved Metals (EPA 6010B), Total Metals (EPA 6010B & 7470), Anions (EPA 300.0), and Alkalinity/Caron Dioxide (SM 2320B). Field measurements of E.C., pH, and temperature were also collected. The analytical laboratory analyzed for combined Nitrate (as N) + Nitrite (as N) to meet holdtime for both outfalls. Analytical results are in Section 8.0 - Tab 8.0 and field measurements are located in Section 8.0 – Tab 3.0.

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 8260B) and GRO/DRO (EPA 8015B). Analytical results are summarized in Section 8.0 Tabs 4.0 – 7.0. Field measurements are located in Section 8.0 – Tab 3.0.

MW #6 was dry and not sampled and MW #20 contained separate phase hydrocarbon and was not sampled. Field measurements of Dissolved Oxygen (D.O.), Oxidation Reduction Potential (O.R.P.) were inadvertently not collected during the semi-annual monitoring event.

Annual sampling started the week of August 17, 2009. The *Facility-Wide Groundwater Monitoring Plan (Revised December 2007)* 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. Field measurements of D.O., O.R.P., E.C., pH, TDS, and temperature were also collected.

East Outfall #2 and East Outfall #3 were sampled and analyzed for BTEX/MTBE (EPA 8260B), Dissolved Metals (EPA 6010B), Total Metals (EPA 6010B & 7470), Anions (EPA 300.0), and Alkalinity/Caron Dioxide (SM 2320B). Field measurements of E.C., pH, and temperature were also collected.

The analytical laboratory analyzed for combined Nitrate (as N) + Nitrite (as N) to meet holdtime for MW #30, MW #37, MW #38, and MW #40. Due to matrix interferences, the total selenium reporting level on MW #13, MW #37, MW #38, MW #40, RW #1, RW #9, and RW#23 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.

Comment 9 of the NMED letter *Approval with Direction 2008 Groundwater Remediation and Monitoring Annual Report* dated September 1, 2009 states "In Section 9.0 (Tables), Western applied NMED's Total Petroleum Hydrocarbon Screening Guidelines, diesel #2/crankcase oil (1.72 mg/kg) for diesel range organics (DO). Western must apply the "unknown oil" screening guidelines of 0.2 mg/L to future annual groundwater monitoring reports." The semi-annual and annual sampling events had already occurred when Western received this letter. Therefore, the previous reporting limit of 1.0 mg/L for DRO is used throughout the 2009 Annual Groundwater Report. Future reports will apply the 0.2 mg/L screening guideline.

MW #3, MW #5, and MW #6 were dry and no samples were collected. MW #20, MW#21, RW #18, RW #28, RW #42, and RW #43 contained separate phase hydrocarbon and were not sampled.

Analytical results are summarized in Section 8.0 -Tabs 4.0 -8.0. Field measurements are located in Section 8.0 – Tab 3.0.

San Juan River
The San Juan River was sampled on a semi-annual basis in 2009. Samples were collected in April and August and analyzed for BTEX/MTBE (EPA Method 8260B), 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 8.0 - Tab 10.0.

Field Data Collection

All facility monitoring wells, recovery wells, observation and collection wells were measured for groundwater elevation in February, April, August, and November. 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.

All water/product levels were measured to an accuracy of 0.01 foot using a Geotech Interface Probe. After determining water levels, initial well volumes are calculated. Total purge volume is determined by monitoring electrical conductance, pH, temperature, O.R.P., and T.D.S. after every two gallons or each well volume, whichever is less, has been purged from the well. The wells were considered satisfactorily purged when the field parameter values did not vary by more than 10 percent for at least three measurements. Field parameters are measured using an Ultrameter 6P.

All purged water was collected in a 55-gallon drum and disposed of through the refinery wastewater system.

Field data and well elevations can be found in Section 8.0, Tabs 1.0 – 3.0 and in Appendix A – Tabs 1.0 -15.0.

Section 3.0 Regulatory Criteria / Groundwater Cleanup Standards

Table of New Mexico and USEPA Groundwater Standards

Metals	(mg/l)
Antimony	0.006 [2]
Arsenic	0.01 [2]
Barium	1.0
Beryllium	0.004 [2]
Cadmium	0.005 [2]
Chromium	0.05
Cobalt	0.05
Copper	1.0
Cyanide	0.2
Lead	0.015[2]
Mercury	0.002
Nickel	0.200
Selenium	0.05
Silver	0.05
Uranium	0.03
Vanadium	0.26[3]
Zinc	10.0

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Regional Screening Levels (April 2009)

Ne - not established

Semivolatiles	(ug/l)
1,2,4-Trichlorobenzene	70 [2]
1,2-Dichlorobenzene	600[2]
1,3-Dichlorobenzene	Ne
1,4-Dichlorobenzene	75[2]
2,4,5-Trichlorophenol	3,700 [3]
2,4,6-Trichlorophenol	6.1 [3]
2,4-Dichlorophenol	110 [3]
2,4-Dimethylphenol	730 [3]
2,4-Dinitrophenol	73 [3]
2,4-Dinitrotoluene	0.22[3]
2,6-Dinitrotoluene	37 [3]
2-Chloronaphthalene	2900[3]
2-Chlorophenol	180[3]
2-Methylnaphthalene	150[3]
2-Methylphenol	1,800 [3]
2-Nitroaniline	110 [3]
2-Nitrophenol	Ne
3,3´-Dichlorobenzidine	0.15[3]
3+4-Methylphenol	180 [3]
3-Nitroaniline	Ne
4,6-Dinitro-2-methylphenol	Ne
4-Bromophenyl phenyl ether	Ne
4-Chloro-3-methylphenol	Ne
4-Chloroaniline	0.34[3]
4-Chlorophenyl phenyl ether	Ne
4-Nitroaniline	3.4[3]
4-Nitrophenol	Ne
Acenaphthene	2200[3]
Acenaphthylene	Ne

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Regional Screening Levels (April 2009)

Ne - not established

30

Semivolatiles	(ug/l)
Aniline	12 [3]
Anthracene	1100[3]
Azobenzene	0.12[3]
Benz(a)anthracene	0.029 [3]
Benzo(a)pyrene	0.2 [2]
Benzo(b)fluoranthene	0.029 [3]
Benzo(g,h,i)perylene	Ne
Benzo(k)fluoranthene	0.29 [3]
Benzoic acid	150,000 [3]
Benzyl alcohol	1800[3]
Bis(2-chloroethoxy)methane	110[3]
Bis(2-chloroethyl)ether	0.012[3]
Bis(2-chloroisopropyl)ether	Ne
Bis(2-ethylhexyl)phthalate	6[2]
Butyl benzyl phthalate	35[3]
Carbazole	Ne
Chrysene	2.9 [3]
Dibenz(a,h)anthracene	0.0029 [3]
Dibenzofuran	Ne
Diethyl phthalate	29,000 [3]
Dimethyl phthalate	Ne
Di-n-butyl phthalate	Ne
Di-n-octyl phthalate	Ne
Fluoranthene	1,500 [3]
Fluorene	1500[3]
Hexachlorobenzene	1.0 [2]
Hexachlorobutadiene	0.86 [3]
Hexachlorocyclopentadiene	50 [2]
Hexachloroethane	4.8 [3]

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Regional Screening Levels (April 2009)

Ne - not established

Table of New Mexico and USEPA Groundwater Standards

Semivolatiles	(ug/l)
Indeno(1,2,3-cd)pyrene	0.029 [3]
Isophorone	71[3]
Naphthalene	0.14[3]
Nitrobenzene	0.12[3]
N-Nitrosodimethylamine	0.00042 [3]
N-Nitrosodi-n-propylamine	0.0096 [3]
N-Nitrosodiphenylamine	14 [3]
Pentachlorophenol	1 [2]
Phenanthrene	Ne
Phenol	5[3]
Pyrene	1100[3]
Pyridine	37 [3]

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Regional Screening Levels (April 2009)

Ne - not established

Table of New Mexico and USEPA Groundwater Standards

Volatiles	**(ug/l)**
1,1,1,2-Tetrachloroethane	0.52[3]
1,1,1-Trichloroethane	60
1,1,2,2-Tetrachloroethane	10
1,1,2-Trichloroethane	5[2]
1,1-Dichloroethane	25
1,1-Dichloroethene	5
1,1-Dichloropropene	Ne
1,2,3-Trichlorobenzene	Ne
1,2,3-Trichloropropane	0.0096[3]
1,2,4-Trichlorobenzene	70.0[2]
1,2,4-Trimethylbenzene	15.0[3]
1,2-Dibromo-3-chloropropane	0.2[2]
1,2-Dibromoethane (EDB)	0.05[2]
1,2-Dichlorobenzene	600.0[2]
1,2-Dichloroethane (EDC)	5[2]
1,2-Dichloropropane	5.0[2]
1,3,5-Trimethylbenzene	12[3]
1,3-Dichlorobenzene	Ne
1,3-Dichloropropane	730[3]
1,4-Dichlorobenzene	75.0[2]
1-Methylnaphthalene	2.3[3]
2,2-Dichloropropane	Ne
2-Butanone	710.0[3]
2-Chlorotoluene	730.0[3]
2-Hexanone	Ne
2-Methylnaphthalene	150[3]
4-Chlorotoluene	2600[3]
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 Regional Screening Levels (April 2009)

Ne - not established

Table of New Mexico and USEPA Groundwater Standards

Volatiles	(ug/l)
Acetone	22000[3]
Benzene	5 [2]
Bromobenzene	20[3]
Bromodichloromethane	0.12[3]
Bromoform	8.5 [3]
Bromomethane	8.7 [3]
Carbon disulfide	1,000 [3]
Carbon Tetrachloride	5[2]
Chlorobenzene	100.0 [2]
Chloroethane	Ne
Chloroform	100
Chloromethane	190 [3]
cis-1,2-DCE	70 [2]
cis-1,3-Dichloropropene	0.4 [3]
Dibromochloromethane	0.15[3]
Dibromomethane	370[3]
Dichlorodifluoromethane	390 [3]
Ethylbenzene	700 [2]
Hexachlorobutadiene	0.86 [3]
Isopropylbenzene	680[3]
Methyl tert-butyl ether (MTBE)	12[3]
Methylene Chloride	5[2]
Naphthalene	0.14[3]
n-Butylbenzene	Ne
n-Propylbenzene	Ne
sec-Butylbenzene	Ne
Styrene	100[2]
tert-Butylbenzene	Ne
Tetrachloroethene (PCE)	5 [2]

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Regional Screening Levels (April 2009)

Ne - not established

Table of New Mexico and USEPA Groundwater Standards

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

Groundwater Standards are WQCC 20NMAC 6.2.3103 unless otherwise indicated

2 - Federal Maximum Contaminant Level

3 - USEPA Regional Screening Levels (April 2009)

Ne - not established

Table of New Mexico and USEPA Groundwater Standards

General Chemistry	**(mg/l)**
Alkalinity, Total (As CaCO3)	Ne
Bicarbonate	Ne
Calcium	Ne
Carbonate	Ne
Chloride	250
Fluoride	1.6
Iron	1
Magnesium	Ne
Manganese	0.2
Nitrogen, Nitrate (As N)	10
Nitrogen, Nitrite (As N)	1[2]
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 Regional Screening Levels (April 2009)

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_3 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_4)....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[a]	100%	0%	0%
Waste Oil[b]	0%	0%	100%

[a] 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.

[b] 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)

TPH			Concentration in Groundwater (mg/L)
Petroleum Product	**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[a]	200	200	0.2
Waste Oil[b]	2500	5000	Petroleum-Related Contaminants
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants

[a] 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.

[b] 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

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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 [a]	800	2000	50.0
Waste Oil [b]	2500	5000	Petroleum-Related Contaminants
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants

[a] 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.

[b] 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.

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 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 Residential SSL (mg/kg)	Values for Direct Exposure to Soil: NMED Industrial SSL (mg/kg)	NMED DAF[a] 20 GW Protection (mg/kg in soil)	NMED DAF[b] 1 GW Protection (mg/kg in soil)
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[c]	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[d]	5.00E+02	1.00E+03	—[e]	—[e]
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

[a] DAF - Dilution Attenuation Factor

[b] For contaminated soil in contact with groundwater.

[c] Based upon total xylenes

[d] No NMED value available, value taken from Massachusetts Contingency Plan, 310 CMR 40.0985, 4/3/06.

[e] 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.

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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Contaminated Sites: Implementation of the MADEP VPH/EPH Approach," Policy, October 31, 2002.

Massachusetts Department of Environmental Protection, Bureau of Waste Site Cleanup and Office of Research and Standards. 2003. "Updated Petroleum Hydrocarbon Fraction Toxicity Values for the VPH/EPH/APH Methodology." November 2003.

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 4.0 Groundwater Monitoring Results

Section 5.0 Chemical Analytical Data

Section 6.0 Remediation System Monitoring

6.0 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 2009 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 2009 the estimated total gallons pumped (SPH and water) from the recovery wells was 1,973,012 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 underneath Hammond Ditch. Liquid in the French drain deposits into Tank #37 and is then pumped to the API Separator. Collection wells are placed on the refinery side of the barrier wall in the depressions or troughs of the Naciemento Formation. Observation wells are situated on the river side of the barrier wall.

From April 2005 to March 31, 2008, a vacuum truck was used to remove fluids from the collection and observation wells on a 3 times per week basis. Since April 2008, fluid removal from the observation and collection wells along Hammond Ditch has consisted of using a hand bailer to periodically pull separate phase hydrocarbon from OW 0 +60, OW 1+50, OW 3+85, OW 11+15, MW #45, and MW #47. All purged water was collected in a 55-gallon drum and disposed of through the refinery wastewater system.

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 throughout 2009. Measured depth to groundwater data from January 2009 through December 2009 is located in Appendix A, 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 2009 was 23,034 barrels (967,415 gallons).

North Outfalls/Draws

A bi-weekly visual inspection of Seeps 1-9 and the San Juan River Bluff occurred throughout 2009.

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 is 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 2009 were 20,097,360 gallons.

Tank #33 effluent analytical summary can be found in Section 8, Tab 9.0.

Overall System Capabilities

Recovery volumes have remained consistent over the last couple of years. The remediation system has been effective while Bloomfield Refinery was in operation and should continue to be effective with the refinery in idle status.

Section 7.0 Summary – Conclusions and Recommendations

7.0 Summary

Compliance Monitoring

Measured depth to groundwater tables and analytical summaries are located in Section 8.0 of this report.

Groundwater Measurements

All facility monitoring wells, recovery wells, observation and collection wells were measured for groundwater elevation in February, April, August, and November of 2009. 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 (typically after four or more days).

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 #12.MW #34, MW #35, MW #37, and MW #38.

Background Wells

MW #5 and MW #6 were dry in February, April, August, and November. MW #3 was practically dry with fluid thickness levels of 0.31 feet to 0.56 feet throughout the year.

Refinery Wells

MW #4, MW #8, MW #29, MW #30, MW #31, MW #40, MW #44, and RW #15 did not contain separate phase hydrocarbon (SPH) during any of the four measuring events. RW #9 and RW #42 were SPH-free for three measuring events but RW #9 had a SPH reading of 0.17 feet in February and RW #42 had a SPH reading of 0.05 feet in August. RW #23 contained SPH in February and November but was SPH-free in April and August. RW #1 contained SPH in every quarter except for April.

MW #20, MW #21, RW #18, RW #28, and RW #43 contained SPH in all four quarters with quantities varying from a low of 0.01 feet (RW #28 – February) to a high of 0.70 feet (MW #20 – November).

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 2009.

Figures 4 -11 in Section 9.0 present groundwater elevation and contour maps that were developed using the data gathered in the quarterly measurement program. Measured depth to groundwater tables used to determine Figures 4 – 15 can be found in Section 8.0, Tab 1.0.

Groundwater Monitoring
The facility-wide semi-annual monitoring event occurred during the week of April 6, 2009. Annual sampling started the week of August 17, 2009. Guidelines from the *Facility-Wide Groundwater Monitoring Plan (revised December 2007*) were followed during both events.

Background Wells
MW #5 and MW #6 were dry throughout 2009. MW #3 was practically dry with fluid thickness levels of 0.31 feet to 0.56 feet throughout the year and consequently, no analytical samples were taken from these wells in 2009.

BTEX - TPH
Comment 9 of the NMED letter *Approval with Direction 2008 Groundwater Remediation and Monitoring Annual Report* dated September 1, 2009 states "In Section 9.0 (Tables), Western applied NMED's Total Petroleum Hydrocarbon Screening Guidelines, diesel #2/crankcase oil (1.72 mg/kg) for diesel range organics (DO). Western must apply the "unknown oil" screening guidelines of 0.2 mg/L to future annual groundwater monitoring reports." The semi-annual and annual sampling events had already occurred when Western received this letter. Therefore, the previous reporting limit of 1.0 mg/L for DRO is used throughout the 2009 Annual Groundwater Report. Future reports will apply the 0.2 mg/L screening guideline.

Refinery Wells
MW #29 and MW #44 analytical results did not exceed regulatory standards for BTEX (Benzene, Toluene, Ethylbenzene, Xylene) and DRO (Diesel Range Organics) in 2009. MW #40 and RW #1 were over the benzene and DRO standards in August. Also, in August, MW #31 and RW #23 topped the benzene, ethylbenzene, xylene, and DRO regulatory values. MW #4 surpassed limits on benzene, xylene, and DRO and RW #9 and RW #15 surpassed the BTEX and DRO standards in August. MW #30 exceeded BTEX and DRO regulatory standards in April and August. MW #8 was over the benzene standard in August. MW #20, MW #21, RW #18, RW #28, and RW #43 were not sampled since the wells contained separate phase hydrocarbon.

Cross-Gradient Wells

Analytical results from MW #26 exceeded the benzene and DRO regulatory standards in August. MW #27 also surpassed the DRO screening guidelines. The analytical results from the other four wells (MW #1, MW #13, 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 four wells (MW #12, 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 and August analytical results for MW #35 and MW #37 exceeded the DRO regulatory limit. MW #11 and MW #34 surpassed benzene and 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, 8 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 2009.

Refinery Wells

WQCC TDS standard (1000 mg/L) was exceeded by MW #4, MW #30, MW #40, MW #44, RW #1, RW #9, RW #15, and RW #23. The results ranged from a low of 1239 mg/L in RW #23 to a high of 3807 mg/L in MW #44. The sulfate standard (600 mg/L) was surpassed by MW #44 (2900 mg/L). The chloride standard (250 mg/L) was met or exceeded by MW #31, MW #40, RW #1, and RW #15 with a low of 310 mg/L in MW #40 to a high of 720 mg/L in MW #31.

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 1975 mg/L at MW #27 to a high of 4218 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 (37 mg/L) and MW #33 (23 mg/L).

Down-Gradient Wells

The TDS standard was exceeded by MW #11, MW #12, MW #34, MW #35, and MW #37 with a range of 1079 mg/L (MW #35) to 1929 mg/L (MW #11). The sulfate regulatory limit (600 mg/L) was matched by MW #12 (600 mg/L). MW #11 (330 mg/L) and MW #37 (280 mg/L) topped the chloride standard.

San Juan River Bluff – Bluff Seeps
Outfalls #2 and #3 analytical results did not exceed regulatory standards for general chemistry standards. Seeps #1, #3, and #6 exceeded TDS, sulfate, and chloride regulatory limits.

Total Metals (RCRA 8)
Total Metals (RCRA 8) were analyzed only during the annual sampling event in August 2009 but not required during the April 2009 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 (2.0 mg/L), MW #40 (2.8 mg/L), RW #1 (2.1 mg/L), RW #15 (1.7 mg/L), and MW #23 (1.7 mg/L).

Cross-Gradient Wells
MW #26 surpassed the barium standard with a result of 2.4 mg/L. Total metals results from all other Cross-Gradient wells were either non-detect or below regulatory levels.

Down-Gradient Wells
MW #12 exceeded the total chromium standard (0.05 mg/l) with a result of 0.69 mg/L and the total lead standard (00.015 mg/L) with a result of 0.081 mg/L. The remaining down-gradient wells (MW #11, MW #34, MW #35, MW #37, and MW #38) 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 2009 were analyzed for WQCC dissolved metals. Dissolved metals analysis was not required for the April 2009 sampling event.

Refinery Wells
MW #4, 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 1.3 mg/L (RW #23) to a high of 1.9 mg/L (RW #1). Iron varied from a low of 1.1 mg/L (RW #23) to a high of 12.0 mg/L (MW #4). Manganese results ranged from 0.51 mg/L to 4.6 mg/L. MW #29 (0.87 mg/L), MW #30 (1.7 mg/L), MW #31 (0.51 mg/L), and MW #44 (1.7 mg/L) surpassed manganese standards.

Cross-Gradient Wells
MW #13 topped manganese standards (0.2 mg/L) with a result of 1.3 mg/L. MW #26 exceeded barium, iron, and manganese regulatory levels with results of 2.2 mg/L, 7.2 mg/L, and 2.9 mg/L respectively. MW #27 surpassed manganese standards with results of 2.1 mg/L.

Down-Gradient Wells
MW #11, MW #34, MW #35, MW #37, and MW #38 exceeded iron and manganese standards. Iron exceedances ranged from a low of 1.1 mg/L at MW #37 to a high of 12.0 mg/L at MW #11. Manganese varied from a low of 1.4 mg/L at MW #37 to a high of 3.6 at MW #34. MW #12 surpassed manganese with a result of 0.34 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 2009.

Refinery Wells
MW #4, MW #30, MW #31, MW #40, RW #1, RW #9, RW #15, and RW #23 exceeded the naphthalene standard of 0.0014 mg/L with range of 0.048 mg/L at MW #4 to a high of 0.53 mg/L at RW #23. RW #1 also surpassed the Bis(2-ethylexyl)phthalate standard of 0.006 mg/L with a result of 0.031 mg/L.

Cross-Gradient Wells
MW #26 exceeded the naphthalene standard of 0.0014 mg/L with a result of 0.075 mg/L.

Down-Gradient Wells
MW #11 exceeded the naphthalene standard of 0.0014 mg/L with a result of 0.051 mg/L. MW #12 surpassed Bis(2-ethylexyl)phthalate standard of 0.006 mg/L with a result of 0.013 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 and the San Juan River Bluff occurred throughout 2009. Visual inspection continues to confirm that the vast majority of the fluids in the outfalls are from precipitation events.

During the week of April 6, 2009 semi-annual samples were collected from Seeps 1, 3, 6, 8, and 9. Guidelines from the *Facility-Wide Groundwater Monitoring Plan December 2007(Revised May 2008)* were followed. During the week of August 17, 2009, samples were collected from Seeps 1, 3, and 6 with the same guidelines being followed as the semi-annual event. Analyses of these water samples indicate that BTEX volatile organic constituents are non-detect.

Analytical results can be found in Section 8.0, Tab 8.0.

Groundwater Measurements

In August 2005 Bloomfield Refinery personnel established a bi-weekly fluid measurement scheme requiring monitoring of all observation and collection wells along Hammond Ditch 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 2009.

In conjunction with the biweekly measurement program, all facility monitoring wells, recovery wells, observation and collection wells were measured for groundwater elevation on a quarterly basis throughout 2009. 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 February (0.23 feet), April (0.50 feet), August (0.60 feet), and November (0.32 feet). OW 3+85 had SPH present in November (0.04 feet) as did OW 11+15 (0.04 feet). CW 8+45 had SPH present in February (0.02 feet), and April (0.01 feet). OW 19+10 was dry in August and November. OW 6+70, OW 8+1, and OW 14+10 were dry in all four quarters.

Quarterly measured depth to groundwater tables can be found in Section 8.0, Tab 1.0. Biweekly measurement tables are located in Appendix A – Tabs 1.0 - 12.0.

Groundwater Monitoring

Semi-Annual sample collection began during the week of April 6, 2009. Annual sampling occurred the week of August 17, 2009. 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 0.034 mg/L (April) and 0.045 mg/L (August). CW 0+60 also surpassed the DRO regulatory limit of 0.20 mg/L in April and August with a result of 5.6 mg/L and 4.1 mg/L respecetively. CW 25+95

60

sampling data did not exceed regulatory standards except in April for benzene with a result of 0.34 mg/L.

Every observation well that was sampled exceeded the TDS standard of 1000 mg/L except for OW 25+70 in August (837 mg/L) and OW 23+90 in April (989 mg/L). Results ranged from a low of 1025 mg/L at OW 25+70 (April) to a high of 2742 mg/L at OW 22+00 (August). The regulatory limits of benzene (0.005 mg/L), and xylene (0.62 mg/L) were surpassed in April and August for OW 3+85. Benzene results were 0.0078 mg/L and 0.009 mg/L respectively and xylene results were 0.86 mg/L and 0.67 mg/L respectively. OW 11+15, OW 16+60, and OW 25+70 also exceeded benzene standards. Results ranged from a low of 0.23 mg/L at OW 11+15 (April) to a high of 0.75 mg/L at OW 16+60 (August).The DRO regulatory standard of 0.2 mg/L was exceeded by OW 0+60, OW 3+85, OW 11+15, OW 16+60, OW 22+00, and OW 23+10. Results ranged from a low of 1.5 mg/L at OW 22+00 (August) to a high of 62 mg/L at OW 16+60(August).

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. Bi-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.

Facility-Wide Monitoring and Remedial Actions

Western Refining indefinitely suspended refining operations at the Bloomfield Refinery on November 23, 2009. The crude unloading and product loading racks, storage tanks and other supporting equipment remain in operation. Guidelines from the *Facility-Wide Groundwater Monitoring Plan December 2007(Revised May 2008)* will continue to be followed.

Section 8.0 Tables

Title Tab

Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Section 8.0 - Tab 1.0

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-01	4th Quarter	11/2/2009	5519.21	21.56	NPP	17.00	5502.21	NPP
		11/9/2009	5519.21	21.56	NPP	17.03	5502.18	NPP
	3rd Quarter	8/13/2009	5519.21	21.56	NPP	16.69	5502.52	NPP
		8/17/2009	5519.21	21.56	NPP	16.72	5502.49	NPP
	2nd Quarter	4/2/2009	5519.21	21.56	NPP	17.27	5501.94	NPP
		4/6/2009	5519.21	21.56	NPP	17.28	5501.93	NPP
	1st Quarter	2/19/2009	5519.21	21.56	NPP	17.39	5501.82	NPP
		2/23/2009	5519.21	21.56	NPP	17.39	5501.82	NPP
MW-03	4th Quarter	11/2/2009	5539.27	36.75	NPP	36.23	5503.04	NPP
		11/9/2009	5539.27	36.75	NPP	36.19	5503.08	NPP
	3rd Quarter	8/13/2009	5539.27	36.75	NPP	36.18	5503.09	NPP
		8/17/2009	5539.27	36.75	NPP	36.18	5503.09	NPP
	2nd Quarter	4/2/2009	5539.27	36.75	NPP	36.41	5502.86	NPP
		4/6/2009	5539.27	36.75	NPP	36.43	5502.84	NPP
	1st Quarter	2/19/2009	5539.27	36.75	NPP	36.44	5502.83	NPP
		2/23/2009	5539.27	36.75	NPP	36.44	5502.83	NPP
MW-04	4th Quarter	11/2/2009	5527.78	30.48	NPP	27.28	5500.50	NPP
		11/9/2009	5527.78	30.48	NPP	27.18	5500.60	NPP
	3rd Quarter	8/13/2009	5527.78	30.48	NPP	27.19	5500.59	NPP
		8/17/2009	5527.78	30.48	NPP	27.16	5500.62	NPP
	2nd Quarter	4/2/2009	5527.78	30.48	NPP	26.99	5500.79	NPP
		4/6/2009	5527.78	30.48	NPP	27.00	5500.78	NPP
	1st Quarter	2/19/2009	5527.78	30.48	NPP	26.97	5500.81	NPP
		2/23/2009	5527.78	30.48	NPP	26.74	5501.04	NPP
MW-05	4th Quarter	11/2/2009	5548.56	37.20	NPP	NWP		NPP
		11/9/2009	5548.56	37.20	NPP	NWP		NPP
	3rd Quarter	8/13/2009	5548.56	37.20	NPP	NWP		NPP
		8/17/2009	5548.56	37.20	NPP	NWP		NPP
	2nd Quarter	4/2/2009	5548.56	37.20	NPP	NWP		NPP
		4/6/2009	5548.56	37.20	NPP	NWP		NPP
	1st Quarter	2/19/2009	5548.56	37.20	NPP	NWP		NPP
		2/23/2009	5548.56	37.20	NPP	NWP		NPP

NPP = No Product Present

NWP = No Water Present

Quarterly Groundwater Elevation - 2009

(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-06	4th Quarter	11/2/2009	5554.61	48.00	NPP	NWP		NPP
		11/9/2009	5554.61	48.00	NPP	NWP		NPP
	3rd Quarter	8/13/2009	5554.61	48.00	NPP	NWP		NPP
		8/17/2009	5554.61	48.00	NPP	NWP		NPP
	2nd Quarter	4/2/2009	5554.61	48.00	NPP	NWP		NPP
		4/6/2009	5554.61	48.00	NPP	NWP		NPP
	1st Quarter	2/19/2009	5554.61	48.00	NPP	NWP		NPP
		2/23/2009	5554.61	48.00	NPP	NWP		NPP
MW-07	4th Quarter	11/2/2009	5527.66	62.61	NPP	27.39	5500.27	NPP
		11/9/2009	5527.66	62.61	NPP	27.45	5500.21	NPP
	3rd Quarter	8/13/2009	5527.66	62.61	NPP	27.40	5500.26	NPP
		8/17/2009	5527.66	62.61	NPP	27.34	5500.32	NPP
	2nd Quarter	4/2/2009	5527.66	62.61	NPP	26.87	5500.79	NPP
		4/6/2009	5527.66	62.61	NPP	26.95	5500.71	NPP
	1st Quarter	2/19/2009	5527.66	62.61	NPP	27.01	5500.65	NPP
		2/23/2009	5527.66	62.61	NPP	27.07	5500.59	NPP
MW-08	4th Quarter	11/2/2009	5534.58	35.93	NPP	31.49	5503.09	NPP
		11/9/2009	5534.58	35.93	NPP	31.43	5503.15	NPP
	3rd Quarter	8/13/2009	5534.58	35.93	NPP	31.36	5503.22	NPP
		8/17/2009	5534.58	35.93	NPP	31.35	5503.23	NPP
	2nd Quarter	4/2/2009	5534.58	35.93	NPP	31.9	5502.68	NPP
		4/6/2009	5534.58	35.93	NPP	31.97	5502.61	NPP
	1st Quarter	2/19/2009	5534.58	35.93	NPP	31.99	5502.59	NPP
		2/23/2009	5534.58	35.93	NPP	31.95	5502.63	NPP
MW-11	4th Quarter	11/2/2009	5510.31	22.94	NPP	11.43	5498.88	NPP
		11/9/2009	5510.31	22.94	NPP	11.48	5498.83	NPP
	3rd Quarter	8/13/2009	5510.31	22.94	NPP	11.48	5498.83	NPP
		8/17/2009	5510.31	22.94	NPP	11.49	5498.82	NPP
	2nd Quarter	4/2/2009	5510.31	22.94	NPP	11.53	5498.78	NPP
		4/6/2009	5510.31	22.94	NPP	11.57	5498.74	NPP
	1st Quarter	2/19/2009	5510.31	22.94	NPP	11.48	5498.83	NPP
		2/23/2009	5510.31	22.94	NPP	11.48	5498.83	NPP

NPP = No Product Present

NWP = No Water Present

Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-12	4th Quarter	11/2/2009	5501.61	14.98	NPP	10.45	5491.16	NPP
		11/9/2009	5501.61	14.98	NPP	10.38	5491.23	NPP
	3rd Quarter	8/13/2009	5501.61	14.98	NPP	11.20	5490.41	NPP
		8/17/2009	5501.61	14.98	NPP	11.20	5490.41	NPP
	2nd Quarter	4/2/2009	5501.61	14.98	NPP	10.24	5491.37	NPP
		4/6/2009	5501.61	14.98	NPP	10.27	5491.34	NPP
	1st Quarter	2/19/2009	5501.61	14.98	NPP	10.13	5491.48	NPP
		2/23/2009	5501.61	14.98	NPP	10.14	5491.47	NPP
MW-13	4th Quarter	11/2/2009	5542.04	52.89	NPP	40.45	5501.59	NPP
		11/9/2009	5542.04	52.89	NPP	40.40	5501.64	NPP
	3rd Quarter	8/13/2009	5542.04	52.89	NPP	40.41	5501.63	NPP
		8/17/2009	5542.04	52.89	NPP	40.42	5501.62	NPP
	2nd Quarter	4/2/2009	5542.04	52.89	NPP	40.31	5501.73	NPP
		4/6/2009	5542.04	52.89	NPP	40.33	5501.71	NPP
	1st Quarter	2/19/2009	5542.04	52.89	NPP	40.27	5501.77	NPP
		2/23/2009	5542.04	52.89	NPP	40.28	5501.76	NPP
MW-20	4th Quarter	11/2/2009	5519.9	27.13	20.63	21.32	5499.13	0.69
		11/9/2009	5519.9	27.13	20.62	21.32	5499.14	0.70
	3rd Quarter	8/13/2009	5519.90	27.13	20.62	21.24	5499.16	0.62
		8/17/2009	5519.90	27.13	20.62	21.23	5499.16	0.61
	2nd Quarter	4/2/2009	5519.9	27.13	20.55	20.84	5499.29	0.29
		4/6/2009	5519.9	27.13	20.60	20.96	5499.23	0.36
	1st Quarter	2/19/2009	5519.9	27.13	20.58	20.85	5499.27	0.27
		2/23/2009	5519.9	27.13	20.56	20.82	5499.29	0.26
MW-21	4th Quarter	11/2/2009	5521.99	30.38	21.7	21.84	5500.26	0.14
		11/9/2009	5521.99	30.38	21.71	21.83	5500.26	0.12
	3rd Quarter	8/13/2009	5521.99	30.38	21.70	21.79	5500.27	0.09
		8/17/2009	5521.99	30.38	21.70	21.80	5500.27	0.10
	2nd Quarter	4/2/2009	5521.99	30.38	21.74	21.82	5500.23	0.08
		4/6/2009	5521.99	30.38	21.77	21.87	5500.20	0.10
	1st Quarter	2/19/2009	5521.99	30.38	21.78	21.85	5500.20	0.07
		2/23/2009	5521.99	30.38	21.76	21.85	5500.21	0.09

NPP = No Product Present

NWP = No Water Present

Quarterly Groundwater Elevation - 2009

(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-25	4th Quarter	11/2/2009	5533.99	41.20	32.75	33.02	5501.19	0.27
		11/9/2009	5533.99	41.20	32.78	33.03	5501.16	0.25
	3rd Quarter	8/13/2009	5533.99	41.20	32.70	32.95	5501.24	0.25
		8/17/2009	5533.99	41.20	32.72	32.97	5501.22	0.25
	2nd Quarter	4/2/2009	5533.99	41.20	32.62	32.82	5501.33	0.20
		4/6/2009	5533.99	41.20	32.64	32.84	5501.31	0.20
	1st Quarter	2/19/2009	5533.99	41.20	32.55	32.72	5501.41	0.17
		2/23/2009	5533.99	41.20	32.55	32.72	5501.41	0.17
MW-26	4th Quarter	11/2/2009	5517.88	25.11	NPP	17.42	5500.46	NPP
		11/9/2009	5517.88	25.11	NPP	17.41	5500.47	NPP
	3rd Quarter	8/13/2009	5517.88	25.11	NPP	17.38	5500.50	NPP
		8/17/2009	5517.88	25.11	NPP	17.39	5500.49	NPP
	2nd Quarter	4/2/2009	5517.88	25.11	NPP	17.30	5500.58	NPP
		4/6/2009	5517.88	25.11	NPP	17.32	5500.56	NPP
	1st Quarter	2/19/2009	5517.88	25.11	NPP	17.24	5500.64	NPP
		2/23/2009	5517.88	25.11	NPP	17.23	5500.65	NPP
MW-27	4th Quarter	11/2/2009	5518.67	24.42	NPP	18.69	5499.98	NPP
		11/9/2009	5518.67	24.42	NPP	18.68	5499.99	NPP
	3rd Quarter	8/13/2009	5518.67	24.42	NPP	18.75	5499.92	NPP
		8/17/2009	5518.67	24.42	NPP	18.75	5499.92	NPP
	2nd Quarter	4/2/2009	5518.67	24.42	NPP	18.67	5500.00	NPP
		4/6/2009	5518.67	24.42	NPP	18.70	5499.97	NPP
	1st Quarter	2/19/2009	5518.67	24.42	NPP	18.63	5500.04	NPP
		2/23/2009	5518.67	24.42	NPP	18.64	5500.03	NPP
MW-29	4th Quarter	11/2/2009	5524.97	28.62	NPP	22.89	5502.08	NPP
		11/9/2009	5524.97	28.62	NPP	22.87	5502.10	NPP
	3rd Quarter	8/13/2009	5524.97	28.62	NPP	22.72	5502.25	NPP
		8/17/2009	5524.97	28.62	NPP	22.74	5502.23	NPP
	2nd Quarter	4/2/2009	5524.97	28.62	NPP	23.12	5501.85	NPP
		4/6/2009	5524.97	28.62	NPP	23.12	5501.85	NPP
	1st Quarter	2/19/2009	5524.97	28.62	NPP	23.22	5501.75	NPP
		2/23/2009	5524.97	28.62	NPP	23.20	5501.77	NPP

NPP = No Product Present

NWP = No Water Present

Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-30	4th Quarter	11/2/2009	5536.83	40.13	NPP	33.81	5503.02	NPP
		11/9/2009	5536.83	40.13	NPP	33.75	5503.08	NPP
	3rd Quarter	8/13/2009	5536.83	40.13	NPP	33.75	5503.08	NPP
		8/17/2009	5536.83	40.13	NPP	33.75	5503.08	NPP
	2nd Quarter	4/2/2009	5536.83	40.13	NPP	33.9	5502.93	NPP
		4/6/2009	5536.83	40.13	NPP	34.02	5502.81	NPP
	1st Quarter	2/19/2009	5536.83	40.13	NPP	34.04	5502.79	NPP
		2/23/2009	5536.83	40.13	NPP	34.02	5502.81	NPP
MW-31	4th Quarter	11/2/2009	5536.24	39.16	NPP	34.12	5502.12	NPP
		11/9/2009	5536.24	39.16	NPP	34.14	5502.10	NPP
	3rd Quarter	8/13/2009	5536.24	39.16	NPP	34.09	5502.15	NPP
		8/17/2009	5536.24	39.16	NPP	34.10	5502.14	NPP
	2nd Quarter	4/2/2009	5536.24	39.16	NPP	34.04	5502.20	NPP
		4/6/2009	5536.24	39.16	NPP	34.05	5502.19	NPP
	1st Quarter	2/19/2009	5536.24	39.16	NPP	33.99	5502.25	NPP
		2/23/2009	5536.24	39.16	NPP	33.99	5502.25	NPP
MW-32	4th Quarter	11/2/2009	5525.64	27.51	NPP	24.97	5500.67	NPP
		11/9/2009	5525.64	27.51	NPP	24.94	5500.70	NPP
	3rd Quarter	8/13/2009	5525.64	27.51	NPP	25.05	5500.59	NPP
		8/17/2009	5525.64	27.51	NPP	25.03	5500.61	NPP
	2nd Quarter	4/2/2009	5525.64	27.51	NPP	25.03	5500.61	NPP
		4/6/2009	5525.64	27.51	NPP	25.05	5500.59	NPP
	1st Quarter	2/19/2009	5525.64	27.51	NPP	24.98	5500.66	NPP
		2/23/2009	5525.64	27.51	NPP	24.99	5500.65	NPP
MW-33	4th Quarter	11/2/2009	5521.79	25.51	NPP	22.21	5499.58	NPP
		11/9/2009	5521.79	25.51	NPP	22.21	5499.58	NPP
	3rd Quarter	8/13/2009	5521.79	25.51	NPP	22.35	5499.44	NPP
		8/17/2009	5521.79	25.51	NPP	22.36	5499.43	NPP
	2nd Quarter	4/2/2009	5521.79	25.51	NPP	22.35	5499.44	NPP
		4/6/2009	5521.79	25.51	NPP	22.36	5499.43	NPP
	1st Quarter	2/19/2009	5521.79	25.51	NPP	22.32	5499.47	NPP
		2/23/2009	5521.79	25.51	NPP	22.32	5499.47	NPP

NPP = No Product Present

NWP = No Water Present

Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Section 8.0 - Tab 1.0

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-34	4th Quarter	11/2/2009	5511.63	20.96	NPP	13.62	5498.01	NPP
		11/9/2009	5511.63	20.96	NPP	13.71	5497.92	NPP
	3rd Quarter	8/13/2009	5511.63	20.96	NPP	14.17	5497.46	NPP
		8/17/2009	5511.63	20.96	NPP	14.18	5497.45	NPP
	2nd Quarter	4/2/2009	5511.63	20.96	NPP	14.33	5497.30	NPP
		4/6/2009	5511.63	20.96	NPP	14.35	5497.28	NPP
	1st Quarter	2/19/2009	5511.63	20.96	NPP	14.25	5497.38	NPP
		2/23/2009	5511.63	20.96	NPP	14.27	5497.36	NPP
MW-35	4th Quarter	11/2/2009	5518.95	26.45	NPP	21.78	5497.17	NPP
		11/9/2009	5518.95	26.45	NPP	21.79	5497.16	NPP
	3rd Quarter	8/13/2009	5518.95	26.45	NPP	22.05	5496.90	NPP
		8/17/2009	5518.95	26.45	NPP	22.09	5496.86	NPP
	2nd Quarter	4/2/2009	5518.95	26.45	NPP	22.32	5496.63	NPP
		4/6/2009	5518.95	26.45	NPP	22.32	5496.63	NPP
	1st Quarter	2/19/2009	5518.95	26.45	NPP	22.23	5496.72	NPP
		2/23/2009	5518.95	26.45	NPP	22.24	5496.71	NPP
MW-36	4th Quarter	11/2/2009	5516.95	23.26	NPP	20.55	5496.40	NPP
		11/9/2009	5516.95	23.26	NPP	20.53	5496.42	NPP
	3rd Quarter	8/13/2009	5516.95	23.26	NPP	20.92	5496.03	NPP
		8/17/2009	5516.95	23.26	NPP	20.87	5496.08	NPP
	2nd Quarter	4/2/2009	5516.95	23.26	NPP	20.96	5495.99	NPP
		4/6/2009	5516.95	23.26	NPP	20.96	5495.99	NPP
	1st Quarter	2/19/2009	5516.95	23.26	NPP	20.89	5496.06	NPP
		2/23/2009	5516.95	23.26	NPP	20.88	5496.07	NPP
MW-37	4th Quarter	11/2/2009	5519.62	27.58	NPP	23.27	5496.35	NPP
		11/9/2009	5519.62	27.58	NPP	23.24	5496.38	NPP
	3rd Quarter	8/13/2009	5519.62	27.58	NPP	23.22	5496.40	NPP
		8/17/2009	5519.62	27.58	NPP	23.22	5496.40	NPP
	2nd Quarter	4/2/2009	5519.62	27.58	NPP	23.55	5496.07	NPP
		4/6/2009	5519.62	27.58	NPP	23.61	5496.01	NPP
	1st Quarter	2/19/2009	5519.62	27.58	NPP	23.52	5496.10	NPP
		2/23/2009	5519.62	27.58	NPP	23.56	5496.06	NPP

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NWP = No Water Present

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Quarterly Groundwater Elevation - 2009

(Pre and Post Recovery Well Operation)

Section 8.0 - Tab 1.0

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-38	4th Quarter	11/2/2009	5519.19	26.82	NPP	23.48	5495.71	NPP
		11/9/2009	5519.19	26.82	NPP	23.48	5495.71	NPP
	3rd Quarter	8/13/2009	5519.19	26.82	NPP	23.83	5495.36	NPP
		8/17/2009	5519.19	26.82	NPP	23.86	5495.33	NPP
	2nd Quarter	4/2/2009	5519.19	26.82	NPP	23.81	5495.38	NPP
		4/6/2009	5519.19	26.82	NPP	23.79	5495.40	NPP
	1st Quarter	2/19/2009	5519.19	26.82	NPP	23.65	5495.54	NPP
		2/23/2009	5519.19	26.82	NPP	23.69	5495.50	NPP
MW-39	4th Quarter	11/2/2009	5520.83	38.34	NPP	25.75	5495.08	NPP
		11/9/2009	5520.83	38.34	NPP	25.7	5495.13	NPP
	3rd Quarter	8/13/2009	5520.83	38.34	NPP	25.78	5495.05	NPP
		8/17/2009	5520.83	38.34	NPP	25.82	5495.01	NPP
	2nd Quarter	4/2/2009	5520.83	38.34	NPP	25.57	5495.26	NPP
		4/6/2009	5520.83	38.34	NPP	25.62	5495.21	NPP
	1st Quarter	2/19/2009	5520.83	38.34	NPP	25.62	5495.21	NPP
		2/23/2009	5520.83	38.34	NPP	25.60	5495.23	NPP
MW-40	4th Quarter	11/2/2009	5527.31	30.07	NPP	28.15	5499.16	NPP
		11/9/2009	5527.31	30.07	NPP	28.09	5499.22	NPP
	3rd Quarter	8/13/2009	5527.31	30.07	NPP	28.17	5499.14	NPP
		8/17/2009	5527.31	30.07	NPP	28.17	5499.14	NPP
	2nd Quarter	4/2/2009	5527.31	30.07	NPP	28.01	5499.30	NPP
		4/6/2009	5527.31	30.07	NPP	28.02	5499.29	NPP
	1st Quarter	2/19/2009	5527.31	30.07	NPP	27.97	5499.34	NPP
		2/23/2009	5527.31	30.07	NPP	27.87	5499.44	NPP
MW-41	4th Quarter	11/2/2009	5526.41	31.62	26.55	27.05	5499.76	0.50
		11/9/2009	5526.41	31.62	26.55	26.9	5499.79	0.35
	3rd Quarter	8/13/2009	5526.41	31.62	26.55	27.10	5499.75	0.55
		8/17/2009	5526.41	31.62	26.57	27.10	5499.73	0.53
	2nd Quarter	4/2/2009	5526.41	31.62	26.4	26.71	5499.95	0.31
		4/6/2009	5526.41	31.62	26.47	26.83	5499.87	0.36
	1st Quarter	2/19/2009	5526.41	31.62	26.41	26.47	5499.99	0.06
		2/23/2009	5526.41	31.62	26.34	26.39	5500.06	0.05

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Quarterly Groundwater Elevation - 2009

(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
MW-44	4th Quarter	11/2/2009	5535.44	50.91	NPP	34.48	5500.96	NPP
		11/9/2009	5535.44	50.91	NPP	34.54	5500.90	NPP
	3rd Quarter	8/13/2009	5535.44	50.91	NPP	34.09	5501.35	NPP
		8/17/2009	5535.44	50.91	NPP	34.04	5501.40	NPP
	2nd Quarter	4/2/2009	5535.44	50.91	NPP	33.67	5501.77	NPP
		4/6/2009	5535.44	50.91	NPP	33.86	5501.58	NPP
	1st Quarter	2/19/2009	5535.44	50.91	NPP	33.92	5501.52	NPP
		2/23/2009	5535.44	50.91	NPP	33.99	5501.45	NPP
MW-45	4th Quarter	11/2/2009	5506.36	16.92	NPP	11.75	5494.61	NPP
		11/9/2009	5506.36	16.92	NPP	11.77	5494.59	NPP
	3rd Quarter	8/13/2009	5506.36	16.92	NPP	11.67	5494.69	NPP
		8/17/2009	5506.36	16.92	NPP	11.68	5494.68	NPP
	2nd Quarter	4/2/2009	5506.36	16.92	NPP	11.61	5494.75	NPP
		4/6/2009	5506.36	16.92	NPP	11.81	5494.55	NPP
	1st Quarter	2/19/2009	5506.36	16.92	NPP	11.81	5494.55	NPP
		2/23/2009	5506.36	16.92	NPP	11.77	5494.59	NPP
MW-46	4th Quarter	11/2/2009	5504.65	10.39	NPP	NWP		NPP
		11/9/2009	5504.65	10.39	NPP	NWP		NPP
	3rd Quarter	8/13/2009	5504.65	10.39	NPP	NWP		NPP
		8/17/2009	5504.65	10.39	NPP	NWP		NPP
	2nd Quarter	4/2/2009	5504.65	10.39	NPP	NWP		NPP
		4/6/2009	5504.65	10.39	NPP	NWP		NPP
	1st Quarter	2/19/2009	5504.65	10.39	NPP	NWP		NPP
		2/23/2009	5504.65	10.39	NPP	NWP		NPP
MW-47	4th Quarter	11/2/2009	5506.77	14.28	12.78	13.45	5493.86	0.67
		11/9/2009	5506.77	14.28	12.76	13.44	5493.87	0.68
	3rd Quarter	8/13/2009	5506.77	14.28	12.68	12.78	5494.07	0.10
		8/17/2009	5506.77	14.28	NPP	12.80	5493.97	NPP
	2nd Quarter	4/2/2009	5506.77	14.28	NPP	12.47	5494.30	NPP
		4/6/2009	5506.77	14.28	NPP	12.50	5494.27	NPP
	1st Quarter	2/19/2009	5506.77	14.28	NPP	12.37	5494.40	NPP
		2/23/2009	5506.77	14.28	NPP	12.38	5494.39	NPP

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NWP = No Water Present

Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Section 8.0 - Tab 1.0

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
P-03	4th Quarter	11/2/2009	5510.77	22.73	NPP	11.20	5499.57	NPP
		11/9/2009	5510.77	22.73	NPP	11.25	5499.52	NPP
	3rd Quarter	8/13/2009	5510.77	22.73	NPP	11.17	5499.60	NPP
		8/17/2009	5510.77	22.73	NPP	11.18	5499.59	NPP
	2nd Quarter	4/2/2009	5510.77	22.73	NPP	11.13	5499.64	NPP
		4/6/2009	5510.77	22.73	NPP	11.18	5499.59	NPP
	1st Quarter	2/19/2009	5510.77	22.73	NPP	10.86	5499.91	NPP
		2/23/2009	5510.77	22.73	NPP	10.88	5499.89	NPP
RW-01	4th Quarter	11/2/2009	5529.34	40.80	32.25	32.81	5496.98	0.56
		11/9/2009	5529.34	40.80	30.81	30.93	5498.51	0.12
	3rd Quarter	8/13/2009	5529.34	40.80	32.50	32.70	5496.80	0.20
		8/17/2009	5529.34	40.80	NPP	30.90	5498.44	NPP
	2nd Quarter	4/2/2009	5529.34	40.80	NPP	33.30	5496.04	NPP
		4/6/2009	5529.34	40.80	NPP	30.88	5498.46	NPP
	1st Quarter	2/19/2009	5529.34	40.80	32.5	32.55	5496.83	0.05
		2/23/2009	5529.34	40.80	30.75	30.81	5498.58	0.06
RW-02	4th Quarter	11/2/2009	5526.94	35.86	27.94	31.1	5498.37	3.16
		11/9/2009	5526.94	35.86	26.33	26.79	5500.52	0.46
	3rd Quarter	8/13/2009	5526.94	35.86	28.00	29.90	5498.56	1.90
		8/17/2009	5526.94	35.86	26.30	26.80	5500.54	0.50
	2nd Quarter	4/2/2009	5526.94	35.86	28.03	30.90	5498.34	2.87
		4/6/2009	5526.94	35.86	27.05	27.45	5499.81	0.40
	1st Quarter	2/19/2009	5526.94	35.86	NPP	27.17	5499.77	NPP
		2/23/2009	5526.94	35.86	NPP	25.95	5500.99	NPP
RW-03	4th Quarter	11/2/2009	5520.35	34.57	NPP	22.04	5498.31	NPP
		11/9/2009	5520.35	34.57	NPP	21.83	5498.52	NPP
	3rd Quarter	8/13/2009	5520.35	34.57	NPP	21.91	5498.44	NPP
		8/17/2009	5520.35	34.57	NPP	21.79	5498.56	NPP
	2nd Quarter	4/2/2009	5520.35	34.57	NPP	22.01	5498.34	NPP
		4/6/2009	5520.35	34.57	NPP	21.88	5498.47	NPP
	1st Quarter	2/19/2009	5520.35	34.57	NPP	21.89	5498.46	NPP
		2/23/2009	5520.35	34.57	NPP	21.74	5498.61	NPP

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Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
RW-09	4th Quarter	11/2/2009	5523.21	34.04	NPP	28.05	5495.16	NPP
		11/9/2009	5523.21	34.04	NPP	24.83	5498.38	NPP
	3rd Quarter	8/13/2009	5523.21	34.04	NPP	28.92	5494.29	NPP
		8/17/2009	5523.21	34.04	NPP	24.80	5498.41	NPP
	2nd Quarter	4/2/2009	5523.21	34.04	NPP	28.30	5494.91	NPP
		4/6/2009	5523.21	34.04	NPP	24.46	5498.75	NPP
	1st Quarter	2/19/2009	5523.21	34.04	25.85	26.02	5497.33	0.17
		2/23/2009	5523.21	34.04	24.72	24.85	5498.46	0.13
RW-14	4th Quarter	11/2/2009	5537.5	41.94	NPP	35.1	5502.40	NPP
		11/9/2009	5537.5	41.94	34.85	34.93	5502.63	0.08
	3rd Quarter	8/13/2009	5537.50	41.94	35.64	36.03	5501.78	0.39
		8/17/2009	5537.50	41.94	34.71	35.45	5502.64	0.74
	2nd Quarter	4/2/2009	5537.5	41.94	35.55	36.65	5501.73	1.10
		4/6/2009	5537.5	41.94	34.96	36.11	5502.31	1.15
	1st Quarter	2/19/2009	5537.5	41.94	35.90	37.55	5501.27	1.65
		2/23/2009	5537.5	41.94	34.92	36.40	5502.28	1.48
RW-15	4th Quarter	11/2/2009	5536.83	43.43	NPP	35.8	5501.03	NPP
		11/9/2009	5536.83	43.43	NPP	34.63	5502.20	NPP
	3rd Quarter	8/13/2009	5536.83	43.43	NPP	36.91	5499.92	NPP
		8/17/2009	5536.83	43.43	NPP	34.61	5502.22	NPP
	2nd Quarter	4/2/2009	5536.83	43.43	NPP	36.63	5500.20	NPP
		4/6/2009	5536.83	43.43	NPP	33.84	5502.99	NPP
	1st Quarter	2/19/2009	5536.83	43.43	NPP	30.48	5506.35	NPP
		2/23/2009	5536.83	43.43	NPP	34.56	5502.27	NPP
RW-16	4th Quarter	11/2/2009	5535.45	41.48	NPP	34.75	5500.70	NPP
		11/9/2009	5535.45	41.48	NPP	33.78	5501.67	NPP
	3rd Quarter	8/13/2009	5535.45	41.48	NPP	38.42	5497.03	NPP
		8/17/2009	5535.45	41.48	NPP	33.77	5501.68	NPP
	2nd Quarter	4/2/2009	5535.45	41.48	NPP	35.02	5500.43	NPP
		4/6/2009	5535.45	41.48	NPP	33.83	5501.62	NPP
	1st Quarter	2/19/2009	5535.45	41.48	NPP	35.16	5500.29	NPP
		2/23/2009	5535.45	41.48	NPP	33.78	5501.67	NPP

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Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
RW-17	4th Quarter	11/2/2009	5533.84	41.89	NPP	34.35	5499.49	NPP
		11/9/2009	5533.84	41.89	NPP	32.87	5500.97	NPP
	3rd Quarter	8/13/2009	5533.84	41.89	NPP	35.07	5498.77	NPP
		8/17/2009	5533.84	41.89	NPP	32.93	5500.91	NPP
	2nd Quarter	4/2/2009	5533.84	41.89	NPP	34.18	5499.66	NPP
		4/6/2009	5533.84	41.89	NPP	32.83	5501.01	NPP
	1st Quarter	2/19/2009	5533.84	41.89	NPP	34.55	5499.29	NPP
		2/23/2009	5533.84	41.89	NPP	32.66	5501.18	NPP
RW-18	4th Quarter	11/2/2009	5529.38	37.58	NPP	35.15	5494.23	NPP
		11/9/2009	5529.38	37.58	33.95	34.04	5495.41	0.09
	3rd Quarter	8/13/2009	5529.38	37.58	NPP	35.08	5494.30	NPP
		8/17/2009	5529.38	37.58	33.90	34.13	5495.43	0.23
	2nd Quarter	4/2/2009	5529.38	37.58	NPP	35.19	5494.19	NPP
		4/6/2009	5529.38	37.58	33.94	34.10	5495.41	0.16
	1st Quarter	2/19/2009	5529.38	37.58	NPP	35.06	5494.32	NPP
		2/23/2009	5529.38	37.58	34.05	34.10	5495.32	0.05
RW-19	4th Quarter	11/2/2009	5530.51	36.64	32.15	32.63	5498.26	0.48
		11/9/2009	5530.51	36.64	29.99	32.5	5500.02	2.51
	3rd Quarter	8/13/2009	5530.51	36.64	32.04	32.07	5498.46	0.03
		8/17/2009	5530.51	36.64	30.08	30.13	5500.42	0.05
	2nd Quarter	4/2/2009	5530.51	36.64	30.70	30.80	5499.79	0.10
		4/6/2009	5530.51	36.64	29.92	30.05	5500.56	0.13
	1st Quarter	2/19/2009	5530.51	36.64	NPP	30.43	5500.08	NPP
		2/23/2009	5530.51	36.64	NPP	29.68	5500.83	NPP
RW-22	4th Quarter	11/2/2009	5524.44	35.60	25.68	26.71	5498.55	1.03
		11/9/2009	5524.44	35.60	25.35	26.39	5498.88	1.04
	3rd Quarter	8/13/2009	5524.44	35.60	25.52	26.10	5498.80	0.58
		8/17/2009	5524.44	35.60	25.32	25.95	5498.99	0.63
	2nd Quarter	4/2/2009	5524.44	35.60	26.63	26.99	5497.74	0.36
		4/6/2009	5524.44	35.60	25.25	25.55	5499.13	0.30
	1st Quarter	2/19/2009	5524.44	35.60	25.47	26.11	5498.84	0.64
		2/23/2009	5524.44	35.60	25.18	25.25	5499.25	0.07

NPP = No Product Present

NWP = No Water Present

Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
RW-23	4th Quarter	11/2/2009	5521.38	35.53	30.82	30.88	5490.55	0.06
		11/9/2009	5521.38	35.53	NPP	23.7	5497.68	NPP
	3rd Quarter	8/13/2009	5521.38	35.53	NPP	30.78	5490.60	NPP
		8/17/2009	5521.38	35.53	NPP	23.58	5497.80	NPP
	2nd Quarter	4/2/2009	5521.38	35.53	NPP	30.73	5490.65	NPP
		4/6/2009	5521.38	35.53	NPP	23.59	5497.79	NPP
	1st Quarter	2/19/2009	5521.38	35.53	24.02	24.62	5497.24	0.60
		2/23/2009	5521.38	35.53	23.49	23.72	5497.84	0.23
RW-28	4th Quarter	11/2/2009	5527.93	36.99	29.18	29.45	5498.70	0.27
		11/9/2009	5527.93	36.99	28.91	29.16	5498.97	0.25
	3rd Quarter	8/13/2009	5527.93	36.99	29.06	29.20	5498.84	0.14
		8/17/2009	5527.93	36.99	28.83	29.02	5499.06	0.19
	2nd Quarter	4/2/2009	5527.93	36.99	NPP	28.97	5498.96	NPP
		4/6/2009	5527.93	36.99	28.94	28.97	5498.98	0.03
	1st Quarter	2/19/2009	5527.93	36.99	28.96	28.97	5498.97	0.01
		2/23/2009	5527.93	36.99	28.93	28.94	5499.00	0.01
RW-42	4th Quarter	11/2/2009	5527.48	32.02	NPP	26.84	5500.64	NPP
		11/9/2009	5527.48	32.02	NPP	26.86	5500.62	NPP
	3rd Quarter	8/13/2009	5527.48	32.02	27.05	27.10	5500.42	0.05
		8/17/2009	5527.48	32.02	26.95	27.01	5500.52	0.06
	2nd Quarter	4/2/2009	5527.48	32.02	NPP	26.93	5500.55	NPP
		4/6/2009	5527.48	32.02	NPP	26.95	5500.53	NPP
	1st Quarter	2/19/2009	5527.48	32.02	NPP	26.71	5500.77	NPP
		2/23/2009	5527.48	32.02	NPP	26.68	5500.80	NPP
RW-43	4th Quarter	11/2/2009	5515.74	24.03	21.75	21.83	5493.97	0.08
		11/9/2009	5515.74	24.03	21.74	21.85	5493.98	0.11
	3rd Quarter	8/13/2009	5515.74	24.03	21.66	21.87	5494.04	0.21
		8/17/2009	5515.74	24.03	21.64	21.83	5494.06	0.19
	2nd Quarter	4/2/2009	5515.74	24.03	NPP	21.67	5494.07	NPP
		4/6/2009	5515.74	24.03	21.72	21.75	5494.01	0.03
	1st Quarter	2/19/2009	5515.74	24.03	21.62	21.67	5494.11	0.05
		2/23/2009	5515.74	24.03	21.56	21.65	5494.16	0.09

NPP = No Product Present

NWP = No Water Present

Quarterly Groundwater Elevation - 2009

(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	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	4th Quarter	11/2/2009	5506.62	12.26	NPP	12.02	5494.60	NPP
		11/9/2009	5506.62	12.26	NPP	12.06	5494.56	NPP
	3rd Quarter	8/13/2009	5506.62	12.26	NPP	11.86	5494.76	NPP
		8/17/2009	5506.62	12.26	NPP	11.88	5494.74	NPP
	2nd Quarter	4/2/2009	5506.62	12.26	NPP	11.74	5494.88	NPP
		4/6/2009	5506.62	12.26	NPP	11.77	5494.85	NPP
	1st Quarter	2/19/2009	5506.62	12.26	NPP	11.66	5494.96	NPP
		2/23/2009	5506.62	12.26	NPP	11.67	5494.95	NPP
OW 1+50	4th Quarter	11/2/2009	5508.03	14.36	14.03	14.35	5493.94	0.32
		11/9/2009	5508.03	14.36	13.97	14.35	5493.98	0.38
	3rd Quarter	8/13/2009	5508.03	14.36	13.85	14.45	5494.06	0.60
		8/17/2009	5508.03	14.36	13.85	14.45	5494.06	0.60
	2nd Quarter	4/2/2009	5508.03	14.36	13.5·	14.00	5494.43	0.50
		4/6/2009	5508.03	14.36	13.52	14.03	5494.41	0.51
	1st Quarter	2/19/2009	5508.03	14.36	13.45	13.68	5494.53	0.23
		2/23/2009	5508.03	14.36	13.45	13.68	5494.53	0.23
OW 3+85	4th Quarter	11/2/2009	5507.31	15.06	13.55	13.59	5493.75	0.04
		11/9/2009	5507.31	15.06	13.55	13.60	5493.75	0.05
	3rd Quarter	8/13/2009	5507.31	15.06	NPP	13.37	5493.94	NPP
		8/17/2009	5507.31	15.06	NPP	13.38	5493.93	NPP
	2nd Quarter	4/2/2009	5507.31	15.06	NPP	13.04	5494.27	NPP
		4/6/2009	5507.31	15.06	NPP	13.07	5494.24	NPP
	1st Quarter	2/19/2009	5507.31	15.06	NPP	12.92	5494.39	NPP
		2/23/2009	5507.31	15.06	NPP	12.93	5494.38	NPP
OW 5+50	4th Quarter	11/2/2009	5507.59	13.67	NPP	13.63	5493.96	NPP
		11/9/2009	5507.59	13.67	NPP	13.65	5493.94	NPP
	3rd Quarter	8/13/2009	5507.59	13.67	NPP	13.50	5494.09	NPP
		8/17/2009	5507.59	13.67	NPP	13.48	5494.11	NPP
	2nd Quarter	4/2/2009	5507.59	13.67	NPP	13.38	5494.21	NPP
		4/6/2009	5507.59	13.67	NPP	13.39	5494.20	NPP
	1st Quarter	2/19/2009	5507.59	13.67	NPP	13.34	5494.25	NPP
		2/23/2009	5507.59	13.67	NPP	13.36	5494.23	NPP

NPP = No Product Present NWP = No Water Present

Quarterly Groundwater Elevation - 2009

(Pre and Post Recovery Well Operation)

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Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbo[n] Thickness
OW 6+70	4th Quarter	11/2/2009	5504.78	14.67	NPP	NWP		NPP
		11/9/2009	5504.78	14.67	NPP	NWP		NPP
	3rd Quarter	8/13/2009	5504.78	14.67	NPP	NWP		NPP
		8/17/2009	5504.78	14.67	NPP	NWP		NPP
	2nd Quarter	4/2/2009	5504.78	14.67	NPP	NWP		NPP
		4/6/2009	5504.78	14.67	NPP	NWP		NPP
	1st Quarter	2/19/2009	5504.78	14.67	NPP	NWP		NPP
		2/23/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	4th Quarter	11/2/2009	5506.53	15.99	NPP	NWP		NPP
		11/9/2009	5506.53	15.99	NPP	NWP		NPP
	3rd Quarter	8/13/2009	5506.53	15.99	NPP	NWP		NPP
		8/17/2009	5506.53	15.99	NPP	NWP		NPP
	2nd Quarter	4/2/2009	5506.53	15.99	NPP	NWP		NPP
		4/6/2009	5506.53	15.99	NPP	NWP		NPP
	1st Quarter	2/19/2009	5506.53	15.99	NPP	NWP		NPP
		2/23/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	4th Quarter	11/2/2009	5506.7	16.59	12.42	12.46	5494.27	0.04
		11/9/2009	5506.7	16.59	12.44	12.46	5494.26	0.02
	3rd Quarter	8/13/2009	5506.70	16.59	NPP	12.38	5494.32	NPP
		8/17/2009	5506.70	16.59	NPP	12.36	5494.34	NPP
	2nd Quarter	4/2/2009	5506.7	16.59	NPP	12.35	5494.35	NPP
		4/6/2009	5506.7	16.59	NPP	12.46	5494.24	NPP
	1st Quarter	2/19/2009	5506.7	16.59	NPP	12.43	5494.27	NPP
		2/23/2009	5506.7	16.59	NPP	12.47	5494.23	NPP
OW 14+10	4th Quarter	11/2/2009	5508.14	12.96	NPP	NWP		NPP
		11/9/2009	5508.14	12.96	NPP	NWP		NPP
	3rd Quarter	8/13/2009	5508.14	12.96	NPP	NWP		NPP
		8/17/2009	5508.14	12.96	NPP	NWP		NPP
	2nd Quarter	4/2/2009	5508.14	12.96	NPP	NWP		NPP
		4/6/2009	5508.14	12.96	NPP	NWP		NPP
	1st Quarter	2/19/2009	5508.14	12.96	NPP	NWP		NPP
		2/23/2009	5508.14	12.96	NPP	NWP		NPP

NPP = No Product Present NWP = No Water Present

Quarterly Groundwater Elevation - 2009

(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 16+60	4th Quarter	11/2/2009	5508.43	15.21	NPP	13.18	5495.25	NPP
		11/9/2009	5508.43	15.21	NPP	13.17	5495.26	NPP
	3rd Quarter	8/13/2009	5508.43	15.21	NPP	12.99	5495.44	NPP
		8/17/2009	5508.43	15.21	NPP	12.98	5495.45	NPP
	2nd Quarter	4/2/2009	5508.43	15.21	NPP	12.71	5495.72	NPP
		4/6/2009	5508.43	15.21	NPP	12.75	5495.68	NPP
	1st Quarter	2/19/2009	5508.43	15.21	NPP	12.68	5495.75	NPP
		2/23/2009	5508.43	15.21	NPP	12.68	5495.75	NPP
OW 19+50	4th Quarter	11/2/2009	5508.03	13.00	NPP	NWP		NPP
		11/9/2009	5508.03	13.00	NPP	NWP		NPP
	3rd Quarter	8/13/2009	5508.03	13.00	NPP	NWP		NPP
		8/17/2009	5508.03	13.00	NPP	NWP		NPP
	2nd Quarter	4/2/2009	5508.03	13.00	NPP	12.16	5495.87	NPP
		4/6/2009	5508.03	13.00	NPP	12.26	5495.77	NPP
	1st Quarter	2/19/2009	5508.03	13.00	NPP	11.94	5496.09	NPP
		2/23/2009	5508.03	13.00	NPP	11.94	5496.09	NPP
OW 22+00	4th Quarter	11/2/2009	5506.91	14.16	NPP	12.55	5494.36	NPP
		11/9/2009	5506.91	14.16	NPP	12.53	5494.38	NPP
	3rd Quarter	8/13/2009	5506.91	14.16	NPP	12.69	5494.22	NPP
		8/17/2009	5506.91	14.16	NPP	12.70	5494.21	NPP
	2nd Quarter	4/2/2009	5506.91	14.16	NPP	11.57	5495.34	NPP
		4/6/2009	5506.91	14.16	NPP	11.78	5495.13	NPP
	1st Quarter	2/19/2009	5506.91	14.16	NPP	11.23	5495.68	NPP
		2/23/2009	5506.91	14.16	NPP	11.26	5495.65	NPP
OW 23+10	4th Quarter	11/2/2009	5514.12	18.34	NPP	16.24	5497.88	NPP
		11/9/2009	5514.12	18.34	NPP	16.25	5497.87	NPP
	3rd Quarter	8/13/2009	5514.12	18.34	NPP	16.34	5497.78	NPP
		8/17/2009	5514.12	18.34	NPP	16.33	5497.79	NPP
	2nd Quarter	4/2/2009	5514.12	18.34	NPP	16.20	5497.92	NPP
		4/6/2009	5514.12	18.34	NPP	16.25	5497.87	NPP
	1st Quarter	2/19/2009	5514.12	18.34	NPP	16.20	5497.92	NPP
		2/23/2009	5514.12	18.34	NPP	16.25	5497.87	NPP

NPP = No Product Present NWP = No Water Present

Quarterly Groundwater Elevation - 2009

(Pre and Post Recovery Well Operation)

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Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
OW 23+90	4th Quarter	11/2/2009	5515.18	18.01	NPP	17.09	5498.09	NPP
		11/9/2009	5515.18	18.01	NPP	17.09	5498.09	NPP
	3rd Quarter	8/13/2009	5515.18	18.01	NPP	17.11	5498.07	NPP
		8/17/2009	5515.18	18.01	NPP	17.12	5498.06	NPP
	2nd Quarter	4/2/2009	5515.18	18.01	NPP	17.05	5498.13	NPP
		4/6/2009	5515.18	18.01	NPP	17.11	5498.07	NPP
	1st Quarter	2/19/2009	5515.18	18.01	NPP	17.11	5498.07	NPP
		2/23/2009	5515.18	18.01	NPP	17.08	5498.10	NPP
OW 25+70	4th Quarter	11/2/2009	5509.00	13.98	NPP	10.73	5498.27	NPP
		11/9/2009	5509.00	13.98	NPP	10.68	5498.32	NPP
	3rd Quarter	8/13/2009	5509.00	13.98	NPP	10.71	5498.29	NPP
		8/17/2009	5509.00	13.98	NPP	10.72	5498.28	NPP
	2nd Quarter	4/2/2009	5509.00	13.98	NPP	10.70	5498.30	NPP
		4/6/2009	5509.00	13.98	NPP	10.73	5498.27	NPP
	1st Quarter	2/19/2009	5509.00	13.98	NPP	10.74	5498.26	NPP
		2/23/2009	5509.00	13.98	NPP	10.74	5498.26	NPP

NPP = No Product Present

NWP = No Water Present

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Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Well ID	Monitoring Event	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	4th Quarter	11/2/2009	5506.68	14.09	NPP	8.57	5498.11	NPP
		11/9/2009	5506.68	14.09	NPP	8.45	5498.23	NPP
	3rd Quarter	8/13/2009	5506.68	14.09	NPP	8.45	5498.23	NPP
		8/17/2009	5506.68	14.09	NPP	8.39	5498.29	NPP
	2nd Quarter	4/2/2009	5506.68	14.09	NPP	8.56	5498.12	NPP
		4/6/2009	5506.68	14.09	NPP	8.53	5498.15	NPP
	1st Quarter	2/19/2009	5506.68	14.09	NPP	8.49	5498.19	NPP
		2/23/2009	5506.68	14.09	NPP	8.42	5498.26	NPP
CW 1+50	4th Quarter	11/2/2009	5505.13	13.74	NPP	7.00	5498.13	NPP
		11/9/2009	5505.13	13.74	NPP	6.85	5498.28	NPP
	3rd Quarter	8/13/2009	5505.13	13.74	NPP	6.96	5498.17	NPP
		8/17/2009	5505.13	13.74	NPP	6.85	5498.28	NPP
	2nd Quarter	4/2/2009	5505.13	13.74	NPP	6.95	5498.18	NPP
		4/6/2009	5505.13	13.74	NPP	6.83	5498.30	NPP
	1st Quarter	2/19/2009	5505.13	13.74	NPP	6.91	5498.22	NPP
		2/23/2009	5505.13	13.74	NPP	6.73	5498.40	NPP
CW 3+85	4th Quarter	11/2/2009	5503.87	13.11	NPP	5.74	5498.13	NPP
		11/9/2009	5503.87	13.11	NPP	5.69	5498.18	NPP
	3rd Quarter	8/13/2009	5503.87	13.11	NPP	5.73	5498.14	NPP
		8/17/2009	5503.87	13.11	NPP	5.67	5498.20	NPP
	2nd Quarter	4/2/2009	5503.87	13.11	NPP	5.61	5498.26	NPP
		4/6/2009	5503.87	13.11	NPP	5.55	5498.32	NPP
	1st Quarter	2/19/2009	5503.87	13.11	NPP	6.58	5497.29	NPP
		2/23/2009	5503.87	13.11	NPP	5.48	5498.39	NPP
CW 5+50	4th Quarter	11/2/2009	5503.76	12.27	NPP	6.43	5497.33	NPP
		11/9/2009	5503.76	12.27	NPP	6.42	5497.34	NPP
	3rd Quarter	8/13/2009	5503.76	12.27	NPP	6.39	5497.37	NPP
		8/17/2009	5503.76	12.27	NPP	6.37	5497.39	NPP
	2nd Quarter	4/2/2009	5503.76	12.27	NPP	6.39	5497.37	NPP
		4/6/2009	5503.76	12.27	NPP	6.39	5497.37	NPP
	1st Quarter	2/19/2009	5503.76	12.27	NPP	6.38	5497.38	NPP
		2/23/2009	5503.76	12.27	NPP	6.36	5497.40	NPP

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Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Section 8.0 - Tab 1.0

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 6+70	4th Quarter	11/2/2009	5503.84	11.45	NPP	6.76	5497.08	NPP
		11/9/2009	5503.84	11.45	NPP	6.77	5497.07	NPP
	3rd Quarter	8/13/2009	5503.84	11.45	NPP	6.70	5497.14	NPP
		8/17/2009	5503.84	11.45	NPP	6.71	5497.13	NPP
	2nd Quarter	4/2/2009	5503.84	11.45	NPP	6.65	5497.19	NPP
		4/6/2009	5503.84	11.45	NPP	6.67	5497.17	NPP
	1st Quarter	2/19/2009	5503.84	11.45	NPP	6.66	5497.18	NPP
		2/23/2009	5503.84	11.45	NPP	6.66	5497.18	NPP
CW 8+10	4th Quarter	11/2/2009	5504.02	11.63	NPP	7.64	5496.38	NPP
		11/9/2009	5504.02	11.63	NPP	7.64	5496.38	NPP
	3rd Quarter	8/13/2009	5504.02	11.63	NPP	7.47	5496.55	NPP
		8/17/2009	5504.02	11.63	NPP	7.47	5496.55	NPP
	2nd Quarter	4/2/2009	5504.02	11.63	NPP	7.46	5496.56	NPP
		4/6/2009	5504.02	11.63	NPP	7.53	5496.49	NPP
	1st Quarter	2/19/2009	5504.02	11.63	NPP	7.55	5496.47	NPP
		2/23/2009	5504.02	11.63	NPP	7.52	5496.50	NPP
CW 8+45	4th Quarter	11/2/2009	5503.8	12.6	NPP	7.77	5496.03	NPP
		11/9/2009	5503.8	12.6	NPP	7.76	5496.04	NPP
	3rd Quarter	8/13/2009	5503.80	12.6	NPP	7.58	5496.22	NPP
		8/17/2009	5503.80	12.6	NPP	7.62	5496.18	NPP
	2nd Quarter	4/2/2009	5503.8	12.60	7.59	7.60	5496.21	0.01
		4/6/2009	5503.8	12.60	7.70	7.71	5496.10	0.01
	1st Quarter	2/19/2009	5503.8	12.60	7.70	7.72	5496.10	0.02
		2/23/2009	5503.8	12.60	7.67	7.68	5496.13	0.01
CW 11+15	4th Quarter	11/2/2009	5503.95	12.27	NPP	5.98	5497.97	NPP
		11/9/2009	5503.95	12.27	NPP	6.01	5497.94	NPP
	3rd Quarter	8/13/2009	5503.95	12.27	NPP	5.97	5497.98	NPP
		8/17/2009	5503.95	12.27	NPP	6.00	5497.95	NPP
	2nd Quarter	4/2/2009	5503.95	12.27	NPP	5.90	5498.05	NPP
		4/6/2009	5503.95	12.27	NPP	5.94	5498.01	NPP
	1st Quarter	2/19/2009	5503.95	12.27	NPP	5.94	5498.01	NPP
		2/23/2009	5503.95	12.27	NPP	5.86	5498.09	NPP

NPP = No Product Present

NWP = No Water Present

Quarterly Groundwater Elevation - 2009

(Pre and Post Recovery Well Operation)

Section 8.0 - Tab 1.0

Well ID	Monitoring Event	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 14+10	4th Quarter	11/2/2009	5504.39	13.05	NPP	6.54	5497.85	NPP
		11/9/2009	5504.39	13.05	NPP	6.53	5497.86	NPP
	3rd Quarter	8/13/2009	5504.39	13.05	NPP	6.43	5497.96	NPP
		8/17/2009	5504.39	13.05	NPP	6.43	5497.96	NPP
	2nd Quarter	4/2/2009	5504.39	13.05	NPP	6.52	5497.87	NPP
		4/6/2009	5504.39	13.05	NPP	6.58	5497.81	NPP
	1st Quarter	2/19/2009	5504.39	13.05	NPP	6.56	5497.83	NPP
		2/23/2009	5504.39	13.05	NPP	6.46	5497.93	NPP
CW 16+60	4th Quarter	11/2/2009	5504.32	12.86	NPP	6.35	5497.97	NPP
		11/9/2009	5504.32	12.86	NPP	6.32	5498.00	NPP
	3rd Quarter	8/13/2009	5504.32	12.86	NPP	6.28	5498.04	NPP
		8/17/2009	5504.32	12.86	NPP	6.26	5498.06	NPP
	2nd Quarter	4/2/2009	5504.32	12.86	NPP	6.33	5497.99	NPP
		4/6/2009	5504.32	12.86	NPP	6.35	5497.97	NPP
	1st Quarter	2/19/2009	5504.32	12.86	NPP	6.34	5497.98	NPP
		2/23/2009	5504.32	12.86	NPP	6.28	5498.04	NPP
CW 19+50	4th Quarter	11/2/2009	5504.52	9.99	NPP	6.47	5498.05	NPP
		11/9/2009	5504.52	9.99	NPP	6.44	5498.08	NPP
	3rd Quarter	8/13/2009	5504.52	9.99	NPP	6.20	5498.32	NPP
		8/17/2009	5504.52	9.99	NPP	6.02	5498.50	NPP
	2nd Quarter	4/2/2009	5504.52	9.99	NPP	6.3	5498.22	NPP
		4/6/2009	5504.52	9.99	NPP	6.3	5498.22	NPP
	1st Quarter	2/19/2009	5504.52	9.99	NPP	6.25	5498.27	NPP
		2/23/2009	5504.52	9.99	NPP	6.17	5498.35	NPP
CW 22+00	4th Quarter	11/2/2009	5508.04	12.34	NPP	8.96	5499.08	NPP
		11/9/2009	5508.04	12.34	NPP	8.96	5499.08	NPP
	3rd Quarter	8/13/2009	5508.04	12.34	NPP	8.93	5499.11	NPP
		8/17/2009	5508.04	12.34	NPP	8.93	5499.11	NPP
	2nd Quarter	4/2/2009	5508.04	12.34	NPP	8.97	5499.07	NPP
		4/6/2009	5508.04	12.34	NPP	8.99	5499.05	NPP
	1st Quarter	2/19/2009	5508.04	12.34	NPP	8.97	5499.07	NPP
		2/23/2009	5508.04	12.34	NPP	8.97	5499.07	NPP

NPP = No Product Present   NWP = No Water Present

Quarterly Groundwater Elevation - 2009
(Pre and Post Recovery Well Operation)

Section 8.0 - Tab 1.0

Well ID	Monitoring Event	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	4th Quarter	11/2/2009	5510.04	14.65	NPP	10.56	5499.48	NPP
		11/9/2009	5510.04	14.65	NPP	10.58	5499.46	NPP
	3rd Quarter	8/13/2009	5510.04	14.65	NPP	10.56	5499.48	NPP
		8/17/2009	5510.04	14.65	NPP	10.54	5499.50	NPP
	2nd Quarter	4/2/2009	5510.04	14.65	NPP	10.63	5499.41	NPP
		4/6/2009	5510.04	14.65	NPP	10.65	5499.39	NPP
	1st Quarter	2/19/2009	5510.04	14.65	NPP	10.65	5499.39	NPP
		2/23/2009	5510.04	14.65	NPP	10.64	5499.40	NPP
CW 23+90	4th Quarter	11/2/2009	5507.32	11.72	NPP	8.04	5499.28	NPP
		11/9/2009	5507.32	11.72	NPP	8.05	5499.27	NPP
	3rd Quarter	8/13/2009	5507.32	11.72	NPP	7.99	5499.33	NPP
		8/17/2009	5507.32	11.72	NPP	7.98	5499.34	NPP
	2nd Quarter	4/2/2009	5507.32	11.72	NPP	8.11	5499.21	NPP
		4/6/2009	5507.32	11.72	NPP	8.12	5499.20	NPP
	1st Quarter	2/19/2009	5507.32	11.72	NPP	8.12	5499.20	NPP
		2/23/2009	5507.32	11.72	NPP	8.12	5499.20	NPP
CW 25+95	4th Quarter	11/2/2009	5505.9	12.25	NPP	7.1	5498.80	NPP
		11/9/2009	5505.9	12.25	NPP	7.11	5498.79	NPP
	3rd Quarter	8/13/2009	5505.90	12.25	NPP	7.10	5498.80	NPP
		8/17/2009	5505.90	12.25	NPP	7.09	5498.81	NPP
	2nd Quarter	4/2/2009	5505.9	12.25	NPP	7.15	5498.75	NPP
		4/6/2009	5505.9	12.25	NPP	7.14	5498.76	NPP
	1st Quarter	2/19/2009	5505.9	12.25	NPP	7.16	5498.74	NPP
		2/23/2009	5505.9	12.25	NPP	7.16	5498.74	NPP

NPP = No Product Present

NWP = No Water Present

Sump Well Fluids Monitoring Jan. 2009

Section 8.0 - Tab 2.0

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	1/12/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
	1/26/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
SW2-0206	1/12/2009	5507.75	27.69	NPP	27.18	5480.57	NPP
	1/26/2009	5507.75	27.69	NPP	27.15	5480.60	NPP
SW3-0206	1/12/2009	5505.29	52.56	NPP	26.07	5479.22	NPP
	1/26/2009	5505.29	52.56	NPP	26.04	5479.25	NPP
SW4-0206	1/12/2009	5504.45	42.34	NPP	32.92	5471.53	NPP
	1/26/2009	5504.45	42.34	NPP	32.85	5471.60	NPP
SW5-0206	1/12/2009	5514.34	52.24	33.88	34.25	5480.39	0.37
	1/26/2009	5514.34	52.24	33.65	34.07	5480.61	0.42
SW6-0206	1/12/2009	5519.72	47.41	NPP	40.78	5478.94	NPP
	1/26/2009	5519.72	47.41	NPP	40.95	5478.77	NPP
SW7-0206	1/12/2009	5517.63	32.95	NPP	17.55	5500.08	NPP
	1/26/2009	5517.63	32.95	NPP	17.18	5500.45	NPP

NPP = No Product Present   NWP = No Water Present

Sump Well Fluids Monitoring Feb. 2009

Section 8.0 - Tab 2.0

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	2/9/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
	2/23/2009	5508.27	53.08	NPP	52.78	5455.49	NPP
SW2-0206	2/9/2009	5507.75	27.69	NPP	27.14	5480.61	NPP
	2/23/2009	5507.75	27.69	NPP	27.15	5480.60	NPP
SW3-0206	2/9/2009	5505.29	52.56	NPP	26.09	5479.20	NPP
	2/23/2009	5505.29	52.56	NPP	26.11	5479.18	NPP
SW4-0206	2/9/2009	5504.45	42.34	NPP	32.82	5471.63	NPP
	2/23/2009	5504.45	42.34	NPP	32.83	5471.62	NPP
SW5-0206	2/9/2009	5514.34	52.24	33.61	33.97	5480.66	0.36
	2/23/2009	5514.34	52.24	33.71	34.09	5480.55	0.38
SW6-0206	2/9/2009	5519.72	47.41	NPP	40.99	5478.73	NPP
	2/23/2009	5519.72	47.41	NPP	41.04	5478.68	NPP
SW7-0206	2/9/2009	5517.63	32.95	NPP	17.33	5500.30	NPP
	2/23/2009	5517.63	32.95	NPP	17.95	5499.68	NPP

NPP = No Product Present NWP = No Water Present

Sump Well Fluids Monitoring March 2009

Section 8.0 - Tab 2.0

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	3/9/2009	5508.27	53.08	NPP	52.78	5455.49	NPP
	3/23/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
SW2-0206	3/9/2009	5507.75	27.69	NPP	27.16	5480.59	NPP
	3/23/2009	5507.75	27.69	NPP	27.18	5480.57	NPP
SW3-0206	3/9/2009	5505.29	52.56	NPP	26.21	5479.08	NPP
	3/23/2009	5505.29	52.56	NPP	26.21	5479.08	NPP
SW4-0206	3/9/2009	5504.45	42.34	NPP	32.74	5471.71	NPP
	3/23/2009	5504.45	42.34	NPP	32.72	5471.73	NPP
SW5-0206	3/9/2009	5514.34	52.24	33.61	33.97	5480.66	0.36
	3/23/2009	5514.34	52.24	33.68	33.78	5480.64	0.10
SW6-0206	3/9/2009	5519.72	47.41	NPP	41.13	5478.59	NPP
	3/23/2009	5519.72	47.41	NPP	41.29	5478.43	NPP
SW7-0206	3/9/2009	5517.63	32.95	NPP	17.73	5499.90	NPP
	3/23/2009	5517.63	32.95	NPP	17.83	5499.80	NPP

NPP = No Product Present   NWP = No Water Present

Sump Well Fluids Monitoring April 2009

Section 8.0 - Tab 2.0

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	4/6/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
	4/20/2009	5508.27	53.08	NPP	52.78	5455.49	NPP
SW2-0206	4/6/2009	5507.75	27.69	NPP	27.23	5480.52	NPP
	4/20/2009	5507.75	27.69	NPP	27.25	5480.50	NPP
SW3-0206	4/6/2009	5505.29	52.56	NPP	26.39	5478.90	NPP
	4/20/2009	5505.29	52.56	NPP	26.37	5478.92	NPP
SW4-0206	4/6/2009	5504.45	42.34	NPP	32.72	5471.73	NPP
	4/20/2009	5504.45	42.34	NPP	32.73	5471.72	NPP
SW5-0206	4/6/2009	5514.34	52.24	35.57	35.58	5478.77	0.01
	4/20/2009	5514.35	52.24	NPP	35.67	5478.68	NPP
SW6-0206	4/6/2009	5519.72	47.41	NPP	41.32	5478.40	NPP
	4/20/2009	5519.72	47.41	NPP	41.53	5478.19	NPP
SW7-0206	4/6/2009	5517.63	32.95	NPP	18.16	5499.47	NPP
	4/20/2009	5517.63	32.95	NPP	18.2	5499.43	NPP

NPP = No Product Present NWP = No Water Present

Sump Well Fluids Monitoring May 2009

Section 8.0 - Tab 2.0

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	5/7/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
	5/18/2009	5508.27	53.08	NPP	52.76	5455.51	NPP
SW2-0206	5/5/2008	5507.75	27.69	NPP	27.28	5480.47	NPP
	5/19/2008	5507.75	27.69	NPP	27.28	5480.47	NPP
SW3-0206	5/7/2009	5505.29	52.56	NPP	26.33	5478.96	NPP
	5/18/2009	5505.29	52.56	NPP	26.36	5478.93	NPP
SW4-0206	5/7/2009	5504.45	42.34	NPP	32.74	5471.71	NPP
	5/18/2009	5504.45	42.34	NPP	32.78	5471.67	NPP
SW5-0206	5/7/2009	5514.34	52.24	NPP	35.78	5478.56	NPP
	5/18/2009	5514.34	52.24	NPP	35.85	5478.49	NPP
SW6-0206	5/7/2009	5519.72	47.41	NPP	41.88	5477.84	NPP
	5/18/2009	5519.72	47.41	NPP	42.08	5477.64	NPP
SW7-0206	5/7/2009	5517.63	32.95	NPP	18.03	5499.60	NPP
	5/18/2009	5517.63	32.95	NPP	18.16	5499.47	NPP

NPP = No Product Present   NWP = No Water Present

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Sump Well Fluids Monitoring June 2009

Section 8.0 - Tab 2.0

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	6/1/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
	6/18/2009	5508.27	53.08	NPP	52.76	5455.51	NPP
	6/29/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
SW2-0206	6/1/2009	5507.75	27.69	NPP	27.29	5480.46	NPP
	6/18/2009	5507.75	27.69	NPP	27.31	5480.44	NPP
	6/29/2009	5507.75	27.69	NPP	27.32	5480.43	NPP
SW3-0206	6/1/2009	5505.29	52.56	NPP	26.26	5479.03	NPP
	6/18/2009	5505.29	52.56	NPP	26.25	5479.04	NPP
	6/29/2009	5505.29	52.56	NPP	26.21	5479.08	NPP
SW4-0206	6/1/2009	5504.45	42.34	NPP	32.81	5471.64	NPP
	6/18/2009	5504.45	42.34	NPP	32.82	5471.63	NPP
	6/29/2009	5504.45	42.34	NPP	32.88	5471.57	NPP
SW5-0206	6/1/2009	5514.34	52.24	NPP	35.86	5478.48	NPP
	6/18/2009	5514.34	52.24	NPP	35.94	5478.40	NPP
	6/29/2009	5514.34	52.24	NPP	36.12	5478.22	NPP
SW6-0206	6/1/2009	5519.72	47.41	42.33	42.35	5477.39	0.02
	6/18/2009	5519.72	47.41	42.50	42.57	5477.21	0.07
	6/29/2009	5519.72	47.41	42.83	42.85	5476.89	0.02
SW7-0206	6/1/2009	5517.63	32.95	NPP	18.05	5499.58	NPP
	6/18/2009	5517.63	32.95	NPP	17.94	5499.69	NPP
	6/29/2009	5517.63	32.95	NPP	17.92	5499.71	NPP

NPP = No Product Present   NWP = No Water Present

Sump Well Fluids Monitoring July 2009

Section 8.0 - Tab 2.0

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	7/14/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
	7/27/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
SW2-0206	7/14/2009	5507.75	27.69	NPP	27.30	5480.45	NPP
	7/27/2009	5507.75	27.69	NPP	27.29	5480.46	NPP
SW3-0206	7/14/2009	5505.29	52.56	NPP	26.33	5478.96	NPP
	7/27/2009	5505.29	52.56	NPP	26.22	5479.07	NPP
SW4-0206	7/14/2009	5504.45	42.34	NPP	32.84	5471.61	NPP
	7/27/2009	5504.45	42.34	NPP	32.83	5471.62	NPP
SW5-0206	7/14/2009	5514.34	52.24	NPP	36.08	5478.26	NPP
	7/27/2009	5514.34	52.24	NPP	35.99	5478.35	NPP
SW6-0206	7/14/2009	5519.72	47.41	42.90	42.91	5476.82	0.01
	7/27/2009	5519.72	47.41	42.94	42.95	5476.78	0.01
SW7-0206	7/14/2009	5517.63	32.95	NPP	17.96	5499.67	NPP
	7/27/2009	5517.63	32.95	NPP	18.1	5499.53	NPP

NPP = No Product Present   NWP = No Water Present

Sump Well Fluids Monitoring Aug. 2009

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	8/13/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
	8/31/2009	5508.27	53.08	NPP	52.78	5455.49	NPP
SW2-0206	8/13/2009	5507.75	27.69	NPP	27.32	5480.43	NPP
	8/31/2009	5507.75	27.69	NPP	27.32	5480.43	NPP
SW3-0206	8/13/2009	5505.29	52.56	NPP	26.15	5479.14	NPP
	8/31/2009	5505.29	52.56	NPP	26.98	5478.31	NPP
SW4-0206	8/13/2009	5504.45	42.34	NPP	32.95	5471.50	NPP
	8/31/2009	5504.45	42.34	NPP	33.00	5471.45	NPP
SW5-0206	8/13/2009	5514.34	52.24	NPP	36.18	5478.16	NPP
	8/31/2009	5514.34	52.24	NPP	36.10	5478.24	NPP
SW6-0206	8/13/2009	5519.72	47.41	43.03	43.04	5476.69	0.01
	8/31/2009	5519.72	47.41	43.13	43.14	5476.59	0.01
SW7-0206	8/13/2009	5517.63	32.95	NPP	17.8	5499.83	NPP
	8/31/2009	5517.63	32.95	NPP	17.4	5500.23	NPP

NPP = No Product Present NWP = No Water Present

Sump Well Fluids Monitoring Sept. 2009

Section 8.0 - Tab 2.0

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	9/9/2009	5508.27	53.08	NPP	52.78	5455.49	NPP
	9/21/2009	5508.27	53.08	NPP	52.78	5455.49	NPP
SW2-0206	9/9/2009	5507.75	27.69	NPP	27.27	5480.48	NPP
	9/21/2009	5507.75	27.69	NPP	27.24	5480.51	NPP
SW3-0206	9/9/2009	5505.29	52.56	NPP	25.89	5479.40	NPP
	9/21/2009	5505.29	52.56	NPP	25.81	5479.48	NPP
SW4-0206	9/9/2009	5504.45	42.34	NPP	33.01	5471.44	NPP
	9/21/2009	5504.45	42.34	NPP	33.01	5471.44	NPP
SW5-0206	9/9/2009	5514.34	52.24	NPP	36.31	5478.03	NPP
	9/21/2009	5514.34	52.24	NPP	36.22	5478.12	NPP
SW6-0206	9/9/2009	5519.72	47.41	43.10	43.12	5476.62	0.02
	9/21/2009	5519.72	47.41	NPP	43.05	5476.67	NPP
SW7-0206	9/9/2009	5517.63	32.95	NPP	17.39	5500.24	NPP
	9/21/2009	5517.63	32.95	NPP	17.23	5500.40	NPP

NPP = No Product Present   NWP = No Water Present

Sump Well Fluids Monitoring Oct. 2009

Section 8.0 - Tab 2.0

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	10/5/2009	5508.27	53.08	NPP	52.78	5455.49	NPP
	10/19/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
SW2-0206	10/5/2009	5507.75	27.69	NPP	27.13	5480.62	NPP
	10/19/2009	5507.75	27.69	NPP	26.07	5481.68	NPP
SW3-0206	10/5/2009	5505.29	52.56	NPP	25.67	5479.62	NPP
	10/19/2009	5505.29	52.56	NPP	25.69	5479.60	NPP
SW4-0206	10/5/2009	5504.45	42.34	NPP	32.87	5471.58	NPP
	10/19/2009	5504.45	42.34	NPP	32.87	5471.58	NPP
SW5-0206	10/5/2009	5514.34	52.24	NPP	34.33	5480.01	NPP
	10/19/2009	5514.34	52.24	NPP	34.35	5479.99	NPP
SW6-0206	10/5/2009	5519.72	47.41	42.84	42.85	5476.88	0.01
	10/19/2009	5519.72	47.41	NPP	42.59	5477.13	NPP
SW7-0206	10/5/2009	5517.63	32.95	NPP	16.76	5500.87	NPP
	10/19/2009	5517.63	32.95	NPP	17.2	5500.43	NPP

NPP = No Product Present   NWP = No Water Present

Sump Well Fluids Monitoring Nov. 2009

Section 8.0 - Tab 2.0

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	11/2/2009	5508.27	53.08	NPP	52.77	5455.50	NPP
	11/16/2009	5508.27	53.08	NPP	52.78	5455.49	NPP
	11/30/2009	5508.27	53.08	NPP	52.78	5455.49	NPP
SW2-0206	11/2/2009	5507.75	27.69	NPP	26.97	5480.78	NPP
	11/16/2009	5507.75	27.69	NPP	26.85	5480.90	NPP
	11/30/2009	5507.75	27.69	NPP	26.80	5480.95	NPP
SW3-0206	11/2/2009	5505.29	52.56	NPP	25.75	5479.54	NPP
	11/16/2009	5505.29	52.56	NPP	25.71	5479.58	NPP
	11/30/2009	5505.29	52.56	NPP	25.72	5479.57	NPP
SW4-0206	11/2/2009	5504.45	42.34	NPP	32.82	5471.63	NPP
	11/16/2009	5504.45	42.34	NPP	32.72	5471.73	NPP
	11/30/2009	5504.45	42.34	NPP	32.69	5471.76	NPP
SW5-0206	11/2/2009	5514.34	52.24	NPP	34.43	5479.91	NPP
	11/16/2009	5514.34	52.24	NPP	34.35	5479.99	NPP
	11/30/2009	5514.34	52.24	NPP	34.30	5480.04	NPP
SW6-0206	11/2/2009	5519.72	47.41	NPP	42.23	5477.49	NPP
	11/16/2009	5519.72	47.41	NPP	41.88	5477.84	NPP
	11/30/2009	5519.72	47.41	NPP	41.77	5477.95	NPP
SW7-0206	11/2/2009	5517.63	32.95	NPP	17.30	5500.33	NPP
	11/16/2009	5517.63	32.95	NPP	17.29	5500.34	NPP
	11/30/2009	5517.63	32.95	NPP	17.29	5500.34	NPP

NPP = No Product Present NWP = No Water Present

Sump Well Fluids Monitoring Dec. 2009

Section 8.0 - Tab 2.0

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	12/14/2009	5508.27	53.08	NPP	52.78	5455.49	NPP
	12/28/2009	5508.27	53.08	NPP	52.75	5455.52	NPP
SW2-0206	12/14/2009	5507.75	27.69	NPP	26.75	5481.00	NPP
	12/28/2009	5507.75	27.69	NPP	26.68	5481.07	NPP
SW3-0206	12/14/2009	5505.29	52.56	NPP	25.92	5479.37	NPP
	12/28/2009	5505.29	52.56	NPP	25.96	5479.33	NPP
SW4-0206	12/14/2009	5504.45	42.34	NPP	32.63	5471.82	NPP
	12/28/2009	5504.45	42.34	NPP	32.59	5471.86	NPP
SW5-0206	12/14/2009	5514.34	52.24	NPP	34.41	5479.93	NPP
	12/28/2009	5514.34	52.24	34.44	34.45	5479.90	0.01
SW6-0206	12/14/2009	5519.72	47.41	NPP	41.65	5478.07	NPP
	12/28/2009	5519.72	47.41	NPP	41.32	5478.40	NPP
SW7-0206	12/14/2009	5517.63	32.95	NPP	17.32	5500.31	NPP
	12/28/2009	5517.63	32.95	NPP	17.35	5500.28	NPP

NPP = No Product Present   NWP = No Water Present

Water Quality Field Measurements

Section 8.0 - Tab 3.0

RW/MW	Date	Depth to H2O (ft)	Depth to Product (ft)	Well Depth (ft)	TDS (mg/L)	E.C. (umhos/cm)	pH	TEMP. (Farenheit)	D.O. (mg/L)	ORP (mV)
MW #1	Aug-09	16.72	NPP	21.56	529	771	6.93	61.2	2.5	225
	Apr-09	17.28	NPP	21.56	544	792	7.17	53.1	NS[3]	NS[3]
	Aug-08	16.92	NPP	21.56	579	831	7.03	61.2	NS[3]	NS[3]
MW #3	Aug-09	36.18	NPP	36.75	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	36.41	NPP	36.75	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Aug-08	36.27	NPP	36.75	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
MW #4	Aug-09	27.19	NPP	30.48	1871	2545.0	6.94	64.0	2.3	258
	Apr-09	26.99	NPP	30.48	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	27.03	NPP	30.48	1680	2287.0	6.96	64.7	NS[3]	NS[3]
MW #5	Aug-09	NWP	NPP	37.2	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NWP	NPP	37.2	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Aug-08	NWP	NPP	37.2	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
MW #6	Aug-09	NWP	NPP	47.92	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NWP	NPP	47.92	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Aug-08	NWP	NPP	47.92	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
MW #7	Aug-09	27.40	NPP	62.61	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Apr-09	26.87	NPP	62.61	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	27.39	NPP	62.61	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #8	Aug-09	31.35	NPP	35.93	693	1004	6.98	65.9	0.9	240
	Apr-09	31.97	NPP	35.93	1740	2361	6.88	56.3	NS[3]	NS[3]
	Aug-08	31.65	NPP	35.93	1943	2612	6.96	59.7	NS[3]	NS[3]
MW #11	Aug-09	11.49	NPP	22.94	1929	2619	6.96	64.4	1.3	268
	Apr-09	11.53	NPP	22.94	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	10.46	NPP	22.94	1655	2226	7.02	66.7	NS[3]	NS[3]
MW #12	Aug-09	11.20	NPP	14.98	1256	1763	6.93	62.5	0.9	212
	Apr-09	10.27	NPP	14.98	946	1346	7.06	50.3	NS[3]	NS[3]
	Aug-08	10.28	NPP	14.98	541	775	7.10	62.6	NS[3]	NS[3]
MW #13	Aug-09	40.42	NPP	52.89	2684	3474	6.91	60.3	1.4	256
	Apr-09	40.33	NPP	52.89	2895	3777	6.95	59.1	NS[3]	NS[3]
	Aug-08	40.36	NPP	52.89	3079	3943	6.92	60.9	NS[3]	NS[3]
MW #20	Aug-09	21.23	20.62	27.13	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	20.96	20.60	27.13	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	21.15	20.71	27.13	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] =Analyte Inadvertently not Monitored this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = 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)	D.O. (mg/L)	ORP (mV)
MW #21	Aug-09	21.80	21.70	30.38	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	21.82	21.74	30.38	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	21.90	21.79	30.38	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #25	Aug-09	32.95	32.70	41.2	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	32.84	32.64	41.2	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	33.05	32.67	41.2	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #26	Aug-09	17.39	NPP	25.11	2149	2877	6.88	62.8	1.1	222
	Apr-09	17.32	NPP	25.11	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	17.21	NPP	25.11	2179	2878	6.95	63.4	NS[3]	NS[3]
MW #27	Aug-09	18.75	NPP	24.42	1975	2665	6.94	61.6	0.9	225
	Apr-09	18.7	NPP	24.42	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	18.13	NPP	24.42	1973	2639	7.01	63.4	NS[3]	NS[3]
MW #29	Aug-09	22.74	NPP	28.62	636	919.0	7.0	60.6	1.1	222
	Apr-09	23.12	NPP	28.62	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	22.80	NPP	28.62	637	917.0	7.0	62.1	NS[3]	NS[3]
MW #30	Aug-09	33.75	NPP	40.13	2300	3062	6.96	62.1	2.3	270
	Apr-09	34.02	NPP	40.13	2271	3020	6.92	60.1	NS[3]	NS[3]
	Aug-08	33.85	NPP	40.13	2219	2935	6.94	65.3	NS[3]	NS[3]
MW #31	Aug-09	34.10	NPP	39.16	2300	4073.0	6.9	62.1	5.6	237
	Apr-09	34.05	NPP	39.16	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	34.00	NPP	39.16	3250	4144.0	7.0	62.4	NS[3]	NS[3]
MW #32	Aug-09	25.03	NPP	27.51	4218	5318	6.99	60.1	7.8	224
	Apr-09	25.05	NPP	27.51	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	24.97	NPP	27.51	4364	5426	7.00	61.4	NS[3]	NS[3]
MW #33	Aug-09	22.36	NPP	25.51	2962	3863	6.97	61.8	2.6	218
	Apr-09	22.36	NPP	25.51	3035	3947	6.97	57.8	NS[3]	NS[3]
	Aug-08	22.25	NPP	25.51	2966	3840	6.98	62.6	NS[3]	NS[3]
MW #34	Aug-09	14.18	NPP	20.96	1495	2061	6.92	61.8	0.9	239
	Apr-09	14.35	NPP	20.96	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	13.36	NPP	20.96	1225	1701	7.02	63.2	NS[3]	NS[3]
MW #35	Aug-09	22.09	NPP	26.45	1079	1611	6.94	61.5	0.8	231
	Apr-09	22.32	NPP	26.45	1146	1524	7.00	57.1	NS[3]	NS[3]
	Aug-08	21.98	NPP	26.45	1311	1810	7.01	61.4	NS[3]	NS[3]

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NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

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NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

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Water Quality Field Measurements

[illegible]W/MW	Date	Depth to H2O (ft)	Depth to Product (ft)	Well Depth (ft)	TDS (mg/L)	E.C. (umhos/cm)	pH	TEMP. (Farenheit)	D.O. (mg/L)	ORP (mV)
MW #36	Aug-09	20.87	NPP	23.26	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Apr-09	20.96	NPP	23.26	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	20.71	NPP	23.26	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #37	Aug-09	23.22	NPP	27.58	1588	2180	6.95	60.6	0.9	223
	Apr-09	23.61	NPP	27.58	1583	2179	6.99	58.1	NS[3]	NS[3]
	Aug-08	23.37	NPP	27.58	1601	2164	7.02	62.4	NS[3]	NS[3]
MW #38	Aug-09	23.86	NPP	26.82	925	1319	6.99	61.9	0.9	193
	Apr-09	23.79	NPP	26.82	961	1369	6.98	58.4	NS[3]	NS[3]
	Aug-08	23.53	NPP	26.82	932	1306	7.00	62.5	NS[3]	NS[3]
MW #39	Aug-09	25.78	NPP	38.34	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Apr-09	25.62	NPP	38.34	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	25.92	NPP	38.34	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #40	Aug-09	28.17	NPP	30.07	2080	2809	7.0	68.4	2.1	246
	Apr-09	28.02	NPP	30.07	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	28.25	NPP	30.07	2121	2827	6.9	68.4	NS[3]	NS[3]
MW #41	Aug-09	27.10	26.55	31.62	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	26.83	26.47	31.62	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	27.22	26.76	31.62	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #44	Aug-09	34.04	NPP	50.91	3807	4,663	6.98	61.4	1.2	261
	Apr-09	33.86	NPP	50.91	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	33.91	NPP	50.91	4080	5,099	6.91	62.4	NS[3]	NS[3]
MW #45	Aug-09	11.68	NPP	16.92	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Apr-09	11.81	NPP	16.92	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	11.72	NPP	16.92	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #46	Aug-09	NS	NPP	10.39	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NS	NPP	10.39	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Aug-08	NS	NPP	10.39	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
MW#47	Aug-09	12.80	NPP	14.28	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Apr-09	12.50	NPP	14.28	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	13.30	12.68	14.28	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
O/F #2	Aug-09	Not a Well	Not a Well	Not a Well	281	441	6.95	63.7	NS[3]	NS[3]
	Apr-09	Not a Well	Not a Well	Not a Well	587	855	7.13	55.9	NS[3]	NS[3]
	Aug-08	Not a Well	Not a Well	Not a Well	1220	1696	7.07	66.7	NS[3]	NS[3]

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] =Analyte Inadvertently not Monitored this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

NWP = No Water Present

NPP = No Product Present

Water Quality Field Measurements

Section 8.0 - Tab 3.0

RW/MW	Date	Depth to H2O (ft)	Depth to Product (ft)	Well Depth (ft)	TDS (mg/L)	E.C. (umhos/cm)	pH	TEMP. (Farenheit)	D.O. (mg/L)	ORP (mV)
O/F #3	Aug-09	Not a Well	Not a Well	Not a Well	238	355	6.94	57.9	NS³	NS³
	Apr-09	Not a Well	Not a Well	Not a Well	655	947	7.07	54.1	NS³	NS³
	Aug-08	Not a Well	Not a Well	Not a Well	310	455	7.08	68.1	NS³	NS³
RW #1	Aug-09	30.90	NPP	40.8	2291	3057	6.97	63.0	NS³	253
	Apr-09	30.88	NPP	40.8	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	30.92	NPP	40.8	2097	2793	7.03	63.8	NS³	NS³
RW #2	Aug-09	26.80	26.30	35.86	NS²	NS²	NS²	NS²	NS²	NS²
	Apr-09	27.45	27.05	35.86	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	27.03	26.11	35.86	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #3	Aug-09	21.79	NPP	34.57	NS²	NS²	NS²	NS²	NS²	NS²
	Apr-09	21.88	NPP	34.57	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	21.57	NPP	34.57	NS²	NS²	NS²	NS²	NS²	NS²
RW #9	Aug-09	24.8	NPP	34.04	1988	2681	7.0	60.9	2.4	271.0
	Apr-09	24.46	NPP	34.04	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	24.84	24.83	34.04	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #14	Aug-09	35.45	34.71	41.94	NS²	NS²	NS²	NS²	NS²	NS²
	Apr-09	36.11	34.96	41.94	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	34.94	NPP	41.94	NS²	NS²	NS²	NS²	NS²	NS²
RW #15	Aug-09	34.61	NPP	43.43	2613	3435	6.92	60.0	2.8	265
	Apr-09	33.84	NPP	43.43	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	34.67	NPP	43.43	2435	3206	6.90	62.0	NS³	NS³
RW #16	Aug-09	33.8	NPP	41.48	NS²	NS²	NS²	NS²	NS²	NS²
	Apr-09	35.02	NPP	41.48	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	35.0	NPP	41.48	NS²	NS²	NS²	NS²	NS²	NS²
RW #17	Aug-09	32.93	NPP	41.89	NS²	NS²	NS²	NS²	NS²	NS²
	Apr-09	32.8	NPP	41.89	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	32.61	NPP	41.89	NS²	NS²	NS²	NS²	NS²	NS²
RW #18	Aug-09	34.13	33.9	37.58	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Apr-09	34.10	33.94	37.58	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	33.97	33.95	37.58	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #19	Aug-09	30.13	30.08	36.64	NS²	NS²	NS²	NS²	NS²	NS²
	Apr-09	30.05	29.92	36.64	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	29.88	NPP	36.64	NS²	NS²	NS²	NS²	NS²	NS²

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

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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)	D.O. (mg/L)	ORP (mV)
RW #22	Aug-09	25.95	25.32	35.61	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Apr-09	25.55	25.25	35.61	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	25.52	NPP	35.61	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
RW #23	Aug-09	23.58	NPP	35.53	1239	1857	6.98	64.8	2.4	222
	Apr-09	23.59	NPP	35.53	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	22.91	NPP	35.53	1139	1596	7.03	65.8	NS[3]	NS[3]
RW #28	Aug-09	29.02	28.83	36.99	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	28.97	28.94	36.99	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	29.13	28.94	36.99	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #42	Aug-09	27.01	26.95	32.02	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	26.95	NPP	32.02	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	26.78	26.65	32.02	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #43	Aug-09	21.83	21.64	24.03	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	21.75	21.72	24.03	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	20.68	20.55	24.03	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] =Analyte Inadvertently not Monitored this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

NWP = No Water Present

NPP = No Product Present

Water Quality Field Measurements

Seep #	Date	TDS (mg/L)	E.C. (umhos/cm)	pH	TEMP. (Farenheit)	D.O. (mg/L)	ORP (mV)
Seep 1	Aug-09	3086	4061	7.08	76.8	NS3	230
	Apr-09	2857	3742	6.91	50.8	NS3	NS3
	Aug-08	2980	3851	7.03	81.9	NS3	NS3
Seep 3	Aug-09	1271	1438	7.19	73.4	NS3	283
	Apr-09	3697	4674	6.89	52.1	NS3	NS3
	Aug-08	4206	5274	7.06	87.8	NS3	NS3
Seep 6	Aug-09	8862	10.4	6.98	66.6	NS3	283
	Apr-09	4799	5927	6.80	47.5	NS3	NS3
	Aug-08	7099	8469	6.96	72.3	NS3	NS3
Seep 7	Aug-09	NS1	NS1	NS1	NS1	NS1	NS1
	Apr-09	NS1	NS1	NS1	NS1	NS1	NS1
	Aug-08	NS1	NS1	NS1	NS1	NS1	NS1
Seep 8	Aug-09	NS1	NS1	NS1	NS1	NS1	NS1
	Apr-09	4007	4891	6.60	71.7	NS3	NS3
	Aug-08	NS1	NS1	NS1	NS1	NS1	NS1
Seep 9	Aug-09	NS1	NS1	NS1	NS1	NS1	NS1
	Apr-09	3562	4568	6.87	59.5	NS3	NS3
	Aug-08	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 =Analyte Inadvertently not Monitored this Sampling Event

NR1= No Sample Required - Well Contains Separate Phase Hydrocarbon

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

NWP = No Water Present

NPP = No Product Present

Background Wells

Groundwater Analysis - Organics

Section 8.0 - Tab 4.0

Sample Location	Date	Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
		EPA Method 8260B					EPA Method 8015B	
WQCC 20 NMAC 6.2.3103; 40CFR141.61 (Benzene and Ethylbenzene); TPH Screening Guidelines Table 2a (DRO); USEPA Regional Screening Levels (April 2009) - MTBE		0.005	0.75	0.70	0.62	0.012	0.2	
MW #3	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
MW #5	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
MW #6	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

Background Wells

Groundwater Analysis - General Chemistry

Section 8.0 - Tab 4.0

		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)	WQCC 20 NMAC 6.2.3103
		1.6	250			10		600			
MW #3	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-07	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-06	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
MW #5	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-07	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-06	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
MW #6	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-07	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-06	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

Background Wells

Groundwater Analysis - Total Metals

Section 8.0 - Tab 4.0

		EPA Method 6010B, EPA Method 7470: Mercury								
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)	40 CFR 141.62 MCL
		0.01	1	0.005	0.05	0.015	0.05	0.05	0.002	
MW #3	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-07	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-06	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
MW #5	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-07	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-06	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
MW #6	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-07	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-06	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

Background Wells

Groundwater Analysis - Dissolved Metals

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)	
		EPA Method 6020A for Uranium - EPA Method 6010B for All Other Metals																
		0.1	1	0.01		0.05	1	1	0.05		0.2		0.05	0.05		0.03	10	WQCC 20 NMAC 6.2.3103
MW #3	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-07	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-06	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
MW #5	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-07	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-06	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
MW #6	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-07	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	
	Aug-06	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

Refinery Wells

Groundwater Analysis - Organics

Section 8.0 - Tab 5.0

Sample Location	Date	Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
		EPA Method 8260B					EPA Method 8015B	
		0.005	0.75	0.70	0.62	0.012	0.2	
RW #1	Aug-09	0.14	<0.005	<0.005	0.014	0.036	65	3.9
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	0.2	<0.005	0.21	0.067	0.021	47	6.7
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #4	Aug-09	0.22	<0.02	0.056	0.65	<0.02	9	6.4
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	0.53	<0.01	0.11	1.6	<0.01	17	10
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #8	Aug-09	0.024	0.21	0.047	0.48	<0.001	<1.0	3.3
	Apr-09	<0.001	<0.001	<0.001	<0.002	<0.001	<1.0	<0.05
	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
RW #9	Aug-09	9.5	<0.02	0.89	2.2	3.4	14	47
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
RW #15	Aug-09	3.0	2.0	2.5	11.0	<0.05	9.4	90
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	6.0	1.0	4.1	21.0	0.03	2.3	62
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
RW #18	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #20	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]

WQCC 20 NMAC 6.2.3103
TPH Screening Guidelines Table 2a (DRO)

40CFR141.61 (Benzene and Ethylbenzene)
USEPA Regional Screening Levels (April 2009) - MTBE

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

Refinery Wells

Groundwater Analysis - Organics

Section 8.0 - Tab 5.0

Sample Location	Date	Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
		EPA Method 8260B					EPA Method 8015B	
		0.005	0.75	0.70	0.62	0.012	0.2	
MW #21	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
RW #23	Aug-09	6.2	<0.05	1.5	2.2	1.2	36	36
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	9.8	<0.10	1.6	9.7	1.5	48	70
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
RW #28	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #29	Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	<0.001	<0.001	<0.001	<0.0015	0.001	<1.0	<0.05
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #30	Aug-09	9.5	8.0	6.3	24.0	<0.10	24	84
	Apr-09	5.1	2.7	3.9	14.0	<0.10	23	76
	Aug-08	6.7	6.7	4.5	18.0	<0.10	6.3	80
	Apr-08	6.0	2.4	3.5	13.0	<0.15	7.3	68
MW #31	Aug-09	3.3	0.024	0.83	1.6	<0.02	5.1	19
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	4.0	0.018	1.4	3.0	<0.01	<1.0	<0.05
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #40	Aug-09	0.019	<0.005	<0.005	<0.0075	0.013	17	5.4
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	0.034	<0.001	0.0056	0.0018	0.016	41	5.1
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]

WQCC 20 NMAC 6.2.3103
TPH Screening Guidelines Table 2a (DRO)
40CFR141.61 (Benzene and Ethylbenzene)
USEPA Regional Screening Levels (April 2009) - MTBE

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

Refinery Wells

Groundwater Analysis - Organics

Section 8.0 - Tab 5.0

		EPA Method 8260B					EPA Method 8015B	
Sample Location	Date	Benzene (mg/L)	Toluene (mg/L)	EthylBen (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
WQCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene) TPH Screening Guidelines Table 2a (DRO) USEPA Regional Screening Levels (April 2009) - MTBE		0.005	0.75	0.70	0.62	0.012	0.2	
RW #42	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
RW #43	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #44	Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.0015	<1.0	<0.05
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	<0.001	<0.001	<0.001	<0.0015	0.0018	<1.0	<0.05
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]

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NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

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Refinery Wells

Groundwater Analysis - General Chemistry

Section 8.0 - Tab 5.0

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)
		EPA 300.0							SM 2320B	
WQCC 20 NMAC 6.2.3103		1.6	250			10		600		
RW #1	Aug-09	<2.0	330	<2.0	3.5	<2.0	<10.0	<10.0	1100	1100
	Aug-08	0.31	250	<0.50	2.3	<0.10	<0.50	<0.50	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[2]	<2.5	3.8	1200	1200
MW #4	Aug-09	0.29	180	<2.0	2.7	<0.10	<0.05	6.5	1100	1100
	Aug-08	0.23	190	<0.10	3.5	<0.10	<0.50	4.4	1000	1000
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]
MW #8	Aug-09	0.33	20	<0.10	0.23	0.5	<0.50	410	100	110
	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[2]	<0.50	980	200	210
RW #9	Aug-09	<1.0	160	<1.0	4.5	<1.0	<5.0	280	920	1000
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	<2.0	420	<2.0	3.9	<2.0	<10	41	1200	1000
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #15	Aug-09	<0.10	460	<0.10	1.6	<0.10	<0.50	1.3	980	1100
	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[2]	<2.5	<2.5	1200	1200
RW #18	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]

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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)
		EPA 300.0							SM 2320B	
WQCC 20 NMAC 6.2.3103		1.6	250			10		600		
MW #20	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #21	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #23	Aug-09	<1.0	100	<1.0	5.1	<1.0	<5.0	11	860	890
	Aug-08	0.4	76	<0.10	<1.0	<0.10	<0.50	3.2	850	780
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #28	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #29	Aug-09	0.4	52	<0.10	0.45	0.93	<0.50	160	190	210
	Aug-08	0.36	57	<0.10	0.4	0.99	<0.50	160	200	210
	Aug-07	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]
	Aug-06	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]
MW #30	Aug-09	<1.0	230	<2.0	4.6	<2.0	<5.0	24	1100	1200
	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[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]

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Groundwater Analysis - General Chemistry

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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)	
		EPA 300.0							SM 2320B		
		1.6	250			10		600			WQCC 20 NMAC 6.2.3103
MW #31	Aug-09	0.21	720	<2.0	15	0.14	<0.50	22	1000	1100	
	Aug-08	0.15	740	<1.0	17	<0.10	<0.50	6.4	1100	1100	
	Aug-07	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	
	Aug-06	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	
MW #40	Aug-09	0.28	310	<2.0	4	<0.10	<0.50	<0.50	1100	1100	
	Aug-08	0.33	310	<2.0	4.4	<2.0	<0.50	<0.50	1200	1200	
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	
	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	
RW #42	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	
	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	
	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	
RW #43	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	
	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	
	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	
MW #44	Aug-09	0.19	69	*<1.0	0.27	*<1.0	<0.50	2900	330	350	
	Aug-08	0.62	72	<0.10	0.28	<0.10	<0.50	3000	360	350	
	Aug-07	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³	
	Aug-06	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	

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Refinery Wells

Groundwater Analysis - Total Metals

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)
		EPA Method 6010B, EPA Method 7470: Mercury							
40 CFR 141.61 MCL		0.01	1	0.005	0.05	0.015	0.05	0.05	0.002
RW #1	Aug-09	<0.02	2.1	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002
	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[2]	NR[2]	NR[2]	<0.006	<0.005	NR[2]	NR[2]	NR[2]
MW #4	Aug-09	<0.02	2.0	<0.002	0.0084	0.0081	<0.05	<0.005	<0.002
	Aug-08	<0.020	1.3	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]
MW #8	Aug-09	<0.02	0.034	<0.002	0.021	<0.005	<0.05	<0.005	<0.0002
	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[2]	NR[2]	NR[2]	2.9	<0.005	NR[2]	NR[2]	NR[2]
RW #9	Aug-09	<0.02	0.23	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	<0.020	1.7	<0.002	<0.006	0.052	<0.05	<0.005	<0.0002
	Aug-06	NR[1]	NR[1]	NR[1]		NR[1]	NR[1]	NR[1]	NR[1]
RW #15	Aug-09	<0.02	1.7	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	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[2]	NR[2]	NR[2]	<0.006	<0.005	NR[2]	NR[2]	NR[2]
RW #18	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]

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Groundwater Analysis - Total Metals

Section 8.0 - Tab 5.0

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)
		EPA Method 6010B, EPA Method 7470: Mercury							
40 CFR 141.61 MCL		0.01	1	0.005	0.05	0.015	0.05	0.05	0.002
MW #20	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW #20	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW #20	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW #20	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW #21	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW #21	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW #21	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW #21	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #23	Aug-09	<0.02	1.7	<0.002	<0.006	0.0096	<0.25	<0.005	<0.0002
RW #23	Aug-08	<0.02	1.4	<0.002	<0.006	0.013	<0.25	<0.005	<0.0002
RW #23	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #23	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #28	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #28	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #28	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #28	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW #29	Aug-09	<0.02	0.028	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
MW #29	Aug-08	<0.02	0.072	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002
MW #29	Aug-07	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³
MW #29	Aug-06	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²
MW #30	Aug-09	<0.02	0.91	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
MW #30	Aug-08	<0.02	0.72	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002
MW #30	Aug-07	<0.020	0.89	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
MW #30	Aug-06	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²

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Refinery Wells

Groundwater Analysis - Total Metals

Section 8.0 - Tab 5.0

Sample Location	Date	EPA Method 6010B, 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)
40 CFR 141.61 MCL		0.01	1	0.005	0.05	0.015	0.05	0.05	0.002
MW #31	Aug-09	<0.02	0.81	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
MW #31	Aug-08	<0.02	1.1	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
MW #31	Aug-07	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #31	Aug-06	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]
MW #40	Aug-09	<0.02	2.8	<0.002	<0.006	0.0075	<0.25	<0.005	<0.0002
MW #40	Aug-08	<0.02	1.8	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002
MW #40	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #40	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #42	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #42	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #42	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #42	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #43	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #43	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #43	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #43	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #44	Aug-09	<0.02	<0.02	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
MW #44	Aug-08	<0.02	<0.02	<0.002	<0.006	<0.005	<0.25	<0.005	<0.0002
MW #44	Aug-07	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]
MW #44	Aug-06	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]

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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)	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)
WQCC 20NMAC6.2.3103		0.1	1	0.01		0.05	1	1	0.05		0.2		0.05	0.05		0.03	10
RW #1	Aug-09	<0.02	1.9	<0.002	110	<0.006	<0.006	3.9	<0.005	40	2.5	4.1	<0.05	<0.005	570	<0.001	<0.05
	Aug-08	<0.02	1.7	<0.002	NS[3]	<0.006	<0.006	3.7	<0.005	NS[3]	2.5	NS[3]	<0.25	<0.005	NS[3]	<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
MW #4	Aug-09	<0.02	1.7	<0.002	130	<0.006	0.017	12	<0.005	52	3.2	5.3	<0.05	<0.005	380	<0.001	<0.05
	Aug-08	<0.02	1.3	<0.002	NS[3]	<0.006	<0.006	9.6	<0.005	NS[3]	3.1	NS[3]	<0.25	<0.005	NS[3]	<0.001	<0.05
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]
MW #8	Aug-09	<0.02	0.025	<0.002	150	<0.006	<0.006	0.042	<0.005	12	0.61	1.9	<0.05	<0.005	50	0.001	<0.05
	Aug-08	<0.02	<0.02	<0.002	NS[3]	0.007	<0.006	0.1	<0.005	NS[3]	0.027	NS[3]	<0.25	<0.005	NS[3]	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
RW #9	Aug-09	<0.02	0.25	<0.002	140	<0.006	<0.006	2.3	0.007	39	2.2	2.9	<0.05	<0.005	450	<0.001	<0.05
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	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[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #15	Aug-09	<0.02	1.5	<0.002	150	<0.006	<0.006	7.2	<0.005	51	4	3.6	<0.05	<0.005	580	<0.001	<0.05
	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
RW #18	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]

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

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon
NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions
* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

Refinery Wells

Groundwater Analysis - Dissolved Metals

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)
		EPA Method 6020A for Uranium - EPA Method 6010B for All Other Metals															
WQCC 20NMAC6.2.3103		0.1	1	0.01		0.05	1	1	0.05		0.2		0.05	0.05		0.03	10
MW #20	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW #21	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #23	Aug-09	<0.02	1.3	<0.002	120	<0.006	<0.006	1.1	0.0086	52	4.6	6.8	<0.05	<0.005	200	<0.001	0.058
	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	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
RW #28	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-07	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-06	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
MW #29	Aug-09	<0.02	<0.02	<0.002	53	<0.006	<0.006	<0.02	<0.005	14	0.87	2.2	<0.05	<0.005	110	0.0017	<0.05
	Aug-08	<0.02	<0.02	<0.002	NS³	<0.006	<0.006	<0.02	<0.005	NS³	0.97	NS³	<0.25	<0.005	NS³	0.002	0.059
	Aug-07	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³	NS³
	Aug-06	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²
MW #30	Aug-09	<0.02	0.70	<0.002	190	<0.006	<0.006	0.4	<0.005	42	1.7	4	<0.05	<0.005	600	<0.001	<0.05
	Aug-08	<0.02	0.72	<0.002	NS³	<0.006	<0.006	0.37	<0.005	NS³	1.7	NS³	<0.25	<0.005	NS³	<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	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²	NR²

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 Analyzed this Sampling Event

NR¹= No Sample Required - Well Contains Separate Phase Hydrocarbon
NR² = No Sample Required per OCD and NMED pre-2007 Conditions
* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

Refinery Wells

Groundwater Analysis - Dissolved Metals

Section 8.0 - Tab 5.0

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)
		EPA Method 6020A for Uranium - EPA Method 6010B for All Other Metals															
WQCC 20NMAC6.2.3103		0.1	1	0.01		0.05	1	1	0.05		0.2		0.05	0.05		0.03	10
MW #31	Aug-09	<0.02	0.81	<0.002	150	<0.006	<0.006	0.12	<0.005	63	0.51	4.7	<0.05	<0.005	690	<0.001	<0.05
	Aug-08	<0.02	1.1	<0.002	NS[3]	<0.006	<0.006	0.21	<0.005	NS[3]	0.71	NS[3]	<0.05	<0.005	NS[3]	<0.001	<0.05
	Aug-07	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-06	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]
MW #40	Aug-09	<0.02	1.7	<0.002	86	<0.006	<0.006	6.2	<0.005	41	2.3	3.8	<0.05	<0.005	540	<0.001	0.057
	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
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #42	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #43	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-06	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #44	Aug-09	<0.02	0.7	<0.002	190	<0.006	<0.006	0.40	<0.005	42	1.7	4.0	<0.05	<0.005	600	<0.001	<0.05
	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[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]
	Aug-06	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]	NR[2]

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Analyzed this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

Refinery Wells

Groundwater Analysis - Semi-Volatile Organic Compounds

Section 8.0 - Tab 5.0

Sample Location	Date	Acenaphthene (mg/L)	Bis(2-ethylexyl) phthalate (mg/L)	2,4 Dimethylphenol (mg/L)	Fluorene (mg/L)	2- Methylnaphthalene (mg/L)	3+2-Methylphenol (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Phenol (mg/L)
		EPA Method 8270B								
		2.2[2]	0.006[2]		1.5[2]	0.15[2]	0.18[2]	0.0014[2]		0.005[2]
RW #1	Aug-09	<0.01	0.031	<0.01	0.034	0.41	<0.01	0.15	0.056	<0.01
	Aug-08	0.011	0.051	<0.01	0.058	0.54	<0.01	0.29	0.077	<0.01
	Aug-07	0.022	0.077	<0.02	0.088	0.86	<0.02	0.43	0.093	<0.02
MW #4	Aug-09	<0.01	<0.01	0.02	<0.01	0.034	<0.01	0.048	<0.01	<0.01
	Aug-08	<0.01	0.022	0.022	<0.01	0.082	<0.01	0.096	<0.01	<0.01
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #8	Aug-09	<0.01	<0.01	<.01	<0.01	0.012	<0.01	0.011	<0.01	<0.01
	Aug-08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Aug-07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
RW #9	Aug-09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.074	<0.05	<0.05
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	<0.02	<0.03	0.029	<0.02	0.12	<0.04	0.13	0.026	0.044
RW #15	Aug-09	<0.01	<0.01	0.013	<0.01	0.088	0.011	0.31	<0.01	0.012
	Aug-08	<0.01	<0.01	0.013	<0.01	0.079	<0.01	0.28	<0.01	0.018
	Aug-07	<0.05	<0.075	0.078	<0.05	0.33	<0.10	0.35	0.068	0.11
RW #18	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]

1 - WQCC 20 NMAC 6.2.3103
2 - USEPA Regional Screening Levels (April 2009)

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

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Refinery Wells

Groundwater Analysis - Semi-Volatile Organic Compounds

Section 8.0 - Tab 5.0

Sample Location	Date	Acenaphthene (mg/L)	Bis(2-ethylexyl) phthalate (mg/L)	2,4 Dimethylphenol (mg/L)	Fluorene (mg/L)	2- Methylnaphthalene (mg/L)	3+2-Methylphenol (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Phenol (mg/L)
		EPA Method 8270B								
		2.2[2]	0.006[2]		1.5[2]	0.15[2]	0.18[2]	0.0014[2]		0.005[2]
MW #20	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #21	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #23	Aug-09	<0.05	<0.05	0.078	<0.05	0.62	0.14	0.53	0.053	<0.05
	Aug-08	<0.05	<0.05	<0.05	0.083	2.6	<0.05	1.5	0.15	<0.05
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #28	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #29	Aug-09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Aug-08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Aug-07	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #30	Aug-09	<0.05	<0.05	<0.05	<0.05	0.2	<0.05	0.39	<0.05	<0.05
	Aug-08	<0.01	<0.01	0.019	<0.01	0.21	0.025	0.59	<0.01	<0.01
	Aug-07	<0.01	<0.015	<0.01	<0.01	0.14	0.02	0.44	<0.01	<0.01

1 - WQCC 20 NMAC 6.2.3103
2 - USEPA Regional Screening Levels (April 2009)

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

Refinery Wells

Groundwater Analysis - Semi-Volatile Organic Compounds

Section 8.0 - Tab 5.0

		EPA Method 8270B								
Sample Location	Date	Acenaphthene (mg/L)	Bis(2-ethylexyl) phthalate (mg/L)	2,4 Dimethylphenol (mg/L)	Fluorene (mg/L)	2- Methylnaphthalene (mg/L)	3+2-Methylphenol (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Phenol (mg/L)
		2.2[2]	0.006[2]		1.5[2]	0.15[2]	0.18[2]	0.0014[2]		0.005[2]
MW #31	Aug-09	<0.05	<0.05	<0.05	<0.05	0.085	<0.05	0.14	<0.05	<0.05
	Aug-08	<0.01	<0.01	<0.01	<0.01	0.082	<0.01	0.14	<0.01	0.01
	Aug-07	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW #40	Aug-09	<0.05	<0.05	<0.05	<0.05	0.29	<0.05	0.079	0.052	<0.05
	Aug-08	<0.05	<0.05	<0.05	<0.05	0.30	<0.05	0.14	0.056	<0.05
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #42	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
RW #43	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW #44	Aug-09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Aug-08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Aug-07	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]

1 - WQCC 20 NMAC 6.2.3103

2 - USEPA Regional Screening Levels (April 2009)

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

Cross - Gradient Wells

		EPA Method 8260B					EPA Method 8015B	
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	0.012	0.2	
MW #1	Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-09	<0.001	<0.001	<0.001	<0.002	<0.001	<1.0	<0.05
	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
MW #13	Aug-09	<0.001	<0.001	<0.001	<0.0015	0.0017	<1.0	<0.05
	Apr-09	<0.001	<0.001	<0.001	<0.002	0.0018	<1.0	<0.05
	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
MW #26	Aug-09	0.11	<0.005	0.12	<0.0075	0.0095	7.8	5
	Apr-09	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	0.12	<0.002	<0.002	0.0039	0.011	2.0	7.9
	Apr-08	NS²	NS²	NS²	NS²	NS²	NS²	NS²
MW #27	Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001	1.3	<0.05
	Apr-09	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	1.3	<0.05
	Apr-08	NS²	NS²	NS²	NS²	NS²	NS²	NS²
MW #32	Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-09	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-08	NS²	NS²	NS²	NS²	NS²	NS²	NS²
MW #33	Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-09	<0.001	<0.001	<0.001	<0.002	<0.001	<1.0	<0.05
	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

WQCC 20 NMAC 6.2.3103
TPH Screening Guidelines Table 2a (DRO)
40CFR141.61 (Benzene and Ethylbenzene)
USEPA Regional Screening Levels (April 2009) - MTBE

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 - General Chemistry

Section 8.0 - Tab 6.0

		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)
WQCC 20 NMAC 6.2.3103		1.6	250			10		600		
MW #1	Aug-09	0.53	16	<0.10	0.3	0.69	<0.50	70	250	270
	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-09	0.16	200	<2.0	2.6	5.8	<0.50	1000	840	890
	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-09	0.32	400	<2.0	5.2	<0.10	<0.50	<0.50	1100	1100
	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-09	0.38	180	<2.0	1.3	<0.10	<0.5	960	280	290
	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-09	0.21	840	<2.0	7.9	37	<0.50	1500	150	170
	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-09	0.32	600	<2.0	5.4	23	<0.50	1000	120	130
	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

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

Cross - Gradient Wells

Groundwater Analysis - Total Metals

Section 8.0 - Tab 6.0

Sample Location	Date	EPA Method 6010B, 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)
40 CFR 141.61 MCL		0.01	1	0.005	0.05	0.015	0.05	0.05	0.002
MW #1	Aug-09	<0.02	0.18	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	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-09	<0.02	0.023	<0.002	<0.006	0.005	<0.25	<0.005	<0.0002
	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-09	<0.02	2.4	<0.002	<0.006	0.008	<0.05	<0.005	<0.0002
	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-09	<0.02	0.03	<0.002	<0.006	0.007	<0.05	<0.005	<0.0002
	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-09	<0.02	0.033	<0.002	<0.006	0.0074	<0.05	<0.005	<0.0002
	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-09	<0.02	<0.02	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	Aug-08	<0.020	<0.02	<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

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = 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)	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)
WQCC 20NMAC6.2.3103		0.1	1	0.01		0.05	1	1	0.05		0.2		0.05	0.05		0.03	10
MW #1	Aug-09	<0.02	<0.02	<0.002	63	<0.006	<0.006	0.041	<0.005	16	0.031	2.6	<0.05	<0.005	85	0.002	<0.05
	Aug-08	<0.02	<0.02	<0.002	NS³	<0.006	<0.006	<0.02	<0.005	NS³	0.022	NS³	<0.05	<0.005	NS³	0.002	<0.05
	Aug-07	<0.02	0.023	<0.002	63	<0.006	<0.006	<0.02	<0.005	16	0.027	2.0	<0.05	<0.005	78	<0.1	<0.05
	Aug-06	<0.02	0.023	<0.002	74	<0.006	<0.006	<0.02	<0.005	18	0.09	2.4	<0.05	<0.005	120	<0.1	0.047
MW #13	Aug-09	<0.02	0.022	<0.002	240	<0.006	<0.006	<0.02	<0.005	76	1.3	4.0	<0.05	<0.005	540	0.008	<0.05
	Aug-08	<0.02	0.026	<0.002	NS³	<0.006	<0.006	<0.02	<0.005	NS³	1.4	NS³	<0.025	<0.005	NS³	0.009	<0.05
	Aug-07	<0.02	0.027	<0.002	270	<0.006	<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	<0.006	0.0063	<0.02	0.0078	82	1.1	3.6	<0.05	<0.005	620	<0.1	0.061
MW #26	Aug-09	<0.02	2.2	<0.002	120	<0.006	<0.006	7.2	<0.005	41	2.9	3.7	<0.05	<0.005	460	<0.001	<0.05
	Aug-08	<0.02	2.3	<0.002	NS³	<0.006	<0.006	6.9	<0.005	NS³	3	NS³	<0.025	<0.005	NS³	<0.001	<0.05
	Aug-07	<0.2	2.3	<0.002	110	<0.006	<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	<0.006	6.8	<0.005	38	3.1	3	<0.05	<0.005	450	<0.1	0.048
MW #27	Aug-09	<0.02	0.03	<0.002	230	<0.006	<0.006	0.4	<0.005	33	2.1	2.7	<0.05	<0.005	350	0.0014	<0.05
	Aug-08	<0.02	0.028	<0.002	NS³	<0.006	<0.006	1.5	<0.005	NS³	4.6	NS³	<0.025	<0.005	NS³	0.002	0.058
	Aug-07	<0.02	0.021	<0.002	330	<0.006	<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	<0.006	7.4	<0.005	52	8	3.7	<0.05	<0.005	440	<0.1	0.005
MW #32	Aug-09	<0.02	0.022	<0.002	330	<0.006	<0.006	<0.02	<0.005	52	<0.002	4.8	<0.05	<0.005	780	0.01	<0.05
	Aug-08	<0.02	0.026	<0.002	NS³	<0.006	<0.006	<0.02	<0.005	NS³	<0.002	NS³	<0.25	<0.005	NS³	0.01	<0.05
	Aug-07	<0.02	0.028	<0.002	350	<0.006	<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	<0.006	<0.02	<0.005	38	<0.002	3.1	<0.05	<0.005	700	<0.1	0.046
MW #33	Aug-09	<0.02	<0.02	<0.002	230	<0.006	<0.006	<0.02	<0.005	33	<0.002	5.5	<0.05	<0.005	550	0.006	<0.05
	Aug-08	<0.02	<0.02	<0.002	NS³	<0.006	<0.006	<0.02	<0.005	NS³	<0.002	NS³	<0.025	<0.005	NS³	0.007	<0.05
	Aug-07	<0.02	<0.02	<0.002	270	<0.006	<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	<0.006	<0.020	<0.005	47	0.0077	4.6	<0.05	<0.005	660	<0.1	0.12

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 Analyzed this Sampling Event

NR¹= No Sample Required - Well Contains Separate Phase Hydrocarbon

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

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

Cross - Gradient Wells

Groundwater Analysis - Semi-Volatile Organic Compounds

Section 8.0 - Tab 6.0

		EPA Method 8270B		
Sample Location	Date	Isophorone (mg/L)	2- Methylnaphthalene (mg/L)	Naphthalene (mg/L)
		0.071²	0.15²	0.0014²
MW #26	Aug-09	<0.01	0.016	0.075
	Aug-08	0.013	0.013	0.06
	Aug-07	<0.01	0.012	0.051

1 - WQCC 20 NMAC 6.2.3103

2 - USEPA Regional Screening Levels (April 2009)

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

Downgradient Wells

Groundwater Analysis - Organics

Section 8.0 - Tab 7.0

		EPA Method 8260B					EPA Method 8015B	
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	0.012	0.2	
MW #11	Aug-09	0.099	<0.001	0.004	<0.0015	0.014	12	1.9
	Apr-09	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	0.0038	<0.001	0.0022	<0.0015	0.019	9.6	3.4
	Apr-08	NS²	NS²	NS²	NS²	NS²	NS²	NS²
MW #12	Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-09	<0.001	<0.001	<0.001	<0.002	<0.001	<1.0	<0.05
	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
MW #34	Aug-09	0.032	<0.001	<0.001	<0.0015	0.0041	9.5	0.74
	Apr-09	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	0.0033	<0.001	<0.001	0.0017	0.0026	3.9	1.4
	Apr-08	NS²	NS²	NS²	NS²	NS²	NS²	NS²
MW #35	Aug-09	<0.001	<0.001	<0.001	<0.0015	0.0025	2.9	0.84
	Apr-09	<0.001	<0.001	<0.001	<0.002	0.0024	2.3	0.33
	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
MW #37	Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001	2.1	<0.05
	Apr-09	<0.001	<0.001	<0.001	<0.002	<0.001	2.4	0.053
	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
MW #38	Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	<0.05
	Apr-09	<0.001	<0.001	<0.001	<0.002	0.002	1.6	<0.05
	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

WQCC 20 NMAC 6.2.3103
TPH Screening Guidelines Table 2a (DRO)
MTBE
40CFR141.61 (Benzene and Ethylbenzene)
USEPA Regional Screening Levels (April 2009) -

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

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Downgradient Wells

Groundwater Analysis - General Chemistry

Section 8.0 - Tab 7.0

		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)
WQCC 20 NMAC 6.2.3103		1.6	250			10		600		
MW #11	Aug-09	0.38	330	<0.20	4.00	<0.10	<0.50	4.0	1100	980
	Aug-08	0.57	110	<1.0	1.40	<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	0.10	82	<1.0	1.00	<0.10	<0.50	19	1100	1100
MW #12	Aug-09	0.44	15	<0.10	0.25	<0.10	<0.50	600	300	320
	Aug-08	0.50	8.3	<0.10	<0.10	<0.10	<0.50	130	270	280
	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
MW #34	Aug-09	0.61	180	<2.0	2.20	<0.10	<0.50	18	850	880
	Aug-08	0.83	110	<0.10	1.30	<0.10	<0.50	9.9	740	750
	Aug-07	0.83	100	<1.0	1.30	<0.10	<0.50	68	880	840
	Aug-06	0.95	60	<1.0	0.80	<0.10	<0.50	27	730	760
MW #35	Aug-09	0.64	98	<1.0*	1.10	<1.0*	<0.50	10	670	710
	Aug-08	0.76	110	<0.1	1.30	<0.10	<0.50	3.6	830	870
	Aug-07	0.71	100	<1.0	1.00	<0.10	<0.50	4.3	820	820
	Aug-06	0.48	180	<1.0	2.30	<0.10	<0.50	3.2	980	1000
MW #37	Aug-09	0.77	280	<1.0*	2.50	<1.0*	<0.50	37	740	810
	Aug-08	0.79	230	<0.10	2.90	<0.10	<0.50	34	760	820
	Aug-07	0.75	320	3.70	<1.0	<0.10	<0.50	37	870	890
	Aug-06	0.45	390	<1.0	4.20	<0.10	<0.50	290	720	780
MW #38	Aug-09	0.84	64	<1.0*	0.70	<1.0*	<0.50	68	530	580
	Aug-08	0.78	60	<0.10	0.67	<0.10	<0.50	150	570	600
	Aug-07	1.00	43	<0.10	0.50	<0.10	<0.50	89	610	630
	Aug-06	0.67	96	<0.10	1.10	<0.10	<0.50	490	600	640

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

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

NR¹= No Sample Required - Well Contains Separate Phase Hydrocarbon

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

Downgradient Wells

Groundwater Analysis - Total Metals

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)	
		EPA Method 6010B, EPA Method 7470: Mercury								
		0.01	1	0.005	0.05	0.015	0.05	0.05	0.002	40 CFR 141.62 MCL
MW #11	Aug-09	<0.020	0.92	<0.002	0.009	0.011	<0.050	<0.005	<0.0002	
	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	
MW #12	Aug-09	<0.020	0.17	<0.002	0.69	0.081	<0.050	<0.005	<0.0002	
	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	
MW #34	Aug-09	<0.020	0.71	<0.002	<0.006	0.0073	<0.050	<0.005	<0.0002	
	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	
MW #35	Aug-09	<0.02	0.54	<0.002	<0.006	0.011	<0.05	<0.005	<0.0002	
	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	
MW #37	Aug-09	<0.020	0.7	<0.002	<0.006	0.0065	<0.25	<0.005	<0.0002	
	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	
MW #38	Aug-09	<0.02	0.18	<0.002	<0.006	0.009	<0.25	<0.005	<0.0002	
	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	

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

Downgradient Wells

Groundwater Analysis - Dissolved Metals

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)
		EPA Method 6020A for Uranium - EPA Method 6010B for All Other Metals															
WQCC 20NMAC6.2.3103		0.1	1	0.01		0.05	1	1	0.05		0.2		0.05	0.05		0.03	10
MW #11	Aug-09	<0.02	0.87	<0.002	120	<0.006	<0.006	12	0.007	27	2.3	1.6	<0.05	<0.005	420	<0.001	<0.05
	Aug-08	<0.02	0.7	<0.002	NS[3]	0.009	<0.006	12	0.007	NS[3]	1.9	NS[3]	<0.25	<0.005	NS[3]	<0.001	<0.05
	Aug-07	<0.02	0.6	<0.002	98	<0.006	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	<0.006	9.3	<0.005	22	1.8	1.4	<0.05	<0.005	390	<0.1	0.051
MW #12	Aug-09	<0.02	0.066	<0.002	100	0.013	<0.006	0.26	<0.005	21	0.34	<1.0	<0.05	<0.005	260	0.008	<0.05
	Aug-08	<0.02	0.06	<0.002	NS[3]	0.011	<0.006	0.021	<0.005	NS[3]	0.065	NS[3]	<0.25	<0.005	NS[3]	0.003	0.095
	Aug-07	<0.02	0.05	<0.002	120	0.008	<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	<0.006	0.069	<0.005	14	0.3	1.1	<0.05	<0.005	100	<0.1	0.036
MW #34	Aug-09	<0.02	0.65	<0.002	99	<0.006	<0.006	3.6	<0.005	19	3.6	1.3	<0.05	<0.005	350	<0.001	<0.05
	Aug-08	<0.02	0.57	<0.002	NS[3]	<0.006	<0.006	4.1	<0.005	NS[3]	3.1	NS[3]	<0.25	<0.005	NS[3]	<0.001	<0.05
	Aug-07	<0.02	0.25	<0.002	130	<0.006	<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	0.0065	3	<0.005	12	2.4	<1.0	<0.05	<0.005	310	<0.1	0.11
MW #35	Aug-09	<0.2	0.39	<0.002	73	<0.006	<0.006	3.1	<0.005	13	1.6	2.3	<0.05	<0.005	270	<0.001	<0.05
	Aug-08	<0.02	0.65	<0.002	NS[3]	<0.006	<0.006	2.6	<0.005	NS[3]	1.4	NS[3]	<0.25	<0.005	NS[3]	<0.001	<0.05
	Aug-07	<0.02	0.71	<0.002	79	<0.006	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	<0.006	2.8	<0.005	26	2.9	2.1	<0.05	<0.005	410	<0.1	0.061
MW #37	Aug-09	<0.02	0.43	<0.002	82	<0.006	<0.006	1.1	<0.005	18	1.4	2.9	<0.05	<0.005	370	<0.001	<0.05
	Aug-08	<0.02	0.43	<0.002	NS[3]	<0.006	<0.006	0.95	<0.005	NS[3]	1.2	NS[3]	<0.25	<0.005	NS[3]	<0.001	0.15
	Aug-07	<0.02	0.47	<0.002	110	<0.006	<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	<0.006	1.3	<0.005	44	2.9	3.5	<0.05	<0.005	550	<0.1	0.032
MW #38	Aug-09	<0.10	0.11	<0.002	91	<0.006	<0.006	2.5	<0.005	16	1.6	3.3	<0.05	<0.005	210	0.003	<0.05
	Aug-08	<0.02	0.17	<0.002	NS[3]	<0.006	<0.006	2.2	<0.005	NS[3]	2.6	NS[3]	<0.25	<0.005	NS[3]	0.002	<0.05
	Aug-07	<0.02	0.11	<0.002	95	<0.006	<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	<0.006	3.1	<0.005	36	3.5	4.3	<0.05	<0.005	290	<0.1	0.059

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Analyzed this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

Downgradient Wells

Groundwater Analysis - Semi-Volatile Organic Compounds

Section 8.0 - Tab 7.0

		EPA Method 8270B			
Sample Location	Date	2-methylnaphthalene (mg/L)	Naphthalene (mg/L)	Bis (2-ethylexyl) phthalate (mg/L)	[1] WQCC 20 NMAC 6.2.3103 [2] USEPA Regional Screening Levels (April 2009)
		0.15[2]	0.0014[2]	0.006[2]	
MW #11	Aug-09	0.019	0.051	<0.01	
	Aug-08	0.01	0.032	<0.01	
	Aug-07	0.013	0.043	<0.01	
MW #12	Aug-09	<0.01	<0.01	0.013	
	Aug-08	<0.01	<0.01	<0.01	

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Sample Inadvertently not Collected this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

San Juan River Bluff

Groundwater Analysis - Organics **Section 8.0 - Tab 8.0**

		EPA Method 8260B					
Sample Location	**Date**	**Benzene (mg/L)**	**Toluene (mg/L)**	**EthylBen (mg/L)**	**Xylene (mg/L)**	**MTBE (mg/L)**	WQCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene) TPH Screening Guidelines Table 2a(DRO) USEPA Regional Screening Levels (April 2009) - MTBE
		0.005	0.75	0.70	0.62	0.012	
Outfall #2	Aug-09	**<0.001**	**<0.001**	**<0.001**	**<0.003**	**<0.0015**	
	Apr-09	**<0.001**	**<0.001**	**<0.001**	**<0.003**	**<0.0015**	
	Aug-08	**<0.001**	**<0.001**	**<0.001**	**<0.003**	**<0.0015**	
	Apr-08	**<0.001**	**<0.001**	**<0.001**	**<0.003**	**<0.0015**	
Outfall #3	Aug-09	**<0.001**	**<0.001**	**<0.001**	**<0.003**	**<0.0015**	
	Apr-09	**<0.001**	**<0.001**	**<0.001**	**<0.003**	**<0.0015**	
	Aug-08	**<0.001**	**<0.001**	**<0.001**	**<0.003**	**<0.0015**	
	Apr-08	**<0.001**	**<0.001**	**<0.001**	**<0.003**	**<0.0015**	

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

San Juan River Bluff

Groundwater Analysis - General Chemistry

Section 8.0 - Tab 8.0

		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)
WQCC 20 NMAC 6.2.3103		1.6	250			10		600		
Outfall #2	Aug-09	0.43	5.3	<0.10	0.18	<0.10	<0.50	73	120	130
	Apr-09	0.65	11	*<0.10	0.11	*<0.10	<0.50	84	320	360
	Aug-08	1.5	17	<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
Outfall #3	Aug-09	0.27	4.5	<0.10	0.16	0.25	<0.50	50	92	100
	Apr-09	0.47	22	*<0.10	0.16	*<0.10	<0.50	150	280	300
	Aug-08	0.38	6.1	<0.10	<0.10	0.36	<0.50	100	110	120
	Apr-08	0.48	23	<0.01	0.15	2.8	<0.50	170	260	280

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Collected this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

San Juan River Bluff

Groundwater Analysis - Total Metals **Section 8.0 - Tab 8.0**

		EPA Method 6010B, EPA Method 7470: Mercury								
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)	
		0.01	1	0.005	0.05	0.015	0.05	0.05	0.002	40 CFR 141.62 MCL
Outfall #2	Aug-09	<0.02	0.029	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002	
	Apr-09	<0.02	0.048	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002	
	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	
Outfall #3	Aug-09	<0.02	0.056	>0.002	<0.006	0.006	<0.05	<0.005	<0.0002	
	Apr-09	<0.02	0.04	>0.002	<0.006	<0.005	<0.05	<0.005	<0.0002	
	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	

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

San Juan River Bluff

Groundwater Analysis - Dissolved Metals

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)
		EPA Method 6010B															
WQCC 20NMAC 6.2.3103		0.1	1	0.01		0.05	1	1	0.05		0.2		0.05	0.05		0.03	10
Outfall #2	Aug-09	<0.02	0.028	<0.002	48	<0.006	<0.006	<0.02	<0.005	9.5	0.0028	1.9	<0.05	<0.005	27	0.0018	<0.05
	Apr-09	<0.02	0.047	<0.002	98	<0.006	<0.006	<0.02	<0.005	21	<0.002	2	<0.05	<0.005	64	0.005	<0.05
	Aug-08	<0.02	0.088	<0.002	NS[3]	<0.006	<0.006	<0.02	<0.005	NS[3]	<0.002	NS[3]	<0.25	<0.005	NS[3]	0.004	0.079
	Apr-08	<0.02	0.042	<0.002	92	<0.006	<0.006	<0.02	<0.005	21	<0.002	1.9	<0.05	<0.005	70	<0.10	<0.05
Outfall #3	Aug-09	<0.02	0.053	<0.002	39	<0.006	<0.006	<0.02	<0.005	7.5	<0.002	1.5	<0.05	<0.005	20	0.0013	<0.05
	Apr-09	<0.02	0.044	<0.002	99	<0.006	<0.006	<0.02	<0.005	20	<0.002	1.7	<0.05	<0.005	76	0.005	<0.05
	Aug-08	<0.02	0.075	<0.002	NS[3]	<0.006	<0.006	<0.02	<0.005	NS[3]	<0.002	NS[3]	<0.05	<0.005	NS[3]	0.001	<0.05
	Apr-08	<0.02	0.034	<0.002	88	<0.006	<0.006	<0.02	<0.005	20	<0.002	1.8	<0.05	<0.005	87	<0.10	0.068

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

Bluff Seeps

Groundwater Analysis

		EPA 8260B					EPA 300.0						SM 2320B	
Sample Location	Date	Benzene (mg/L)	Toluene (mg/L)	EthylBen (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	0.012	1.6	250		10		600		
Seep 1	Aug-09	<0.001	<0.001	<0.001	<0.003	0.0034	0.29	390	<2.0	<0.10	<0.50	1500	200	220
	Apr-09	<0.001	<0.001	<0.001	<0.002	0.072	0.28	310	<1.0	<0.10	<0.50	1400	340	380
	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	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
Seep 3	Aug-09	<0.001	<0.001	<0.001	<0.003	<0.0015	0.22	1400	<2.0	<2.0	<10.0	6800	120	130
	Apr-09	<0.001	<0.001	<0.001	<0.002	0.006	0.32	340	<1.0	<0.10	<0.50	2200	290	320
	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	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
Seep 6	Aug-09	<0.001	<0.001	<0.001	<0.003	<0.0015	0.58	4800	<2.0	<2.0	<10.0	1500	150	160
	Apr-09	<0.001	<0.001	<0.001	<0.002	0.014	<0.50	2900	<2.0*	<2.0*	<0.50	1000	420	440
	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	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
Seep 7	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	<0.001	<0.001	<0.001	<0.002	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
Seep 8	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	<0.001	<0.001	<0.001	<0.002	<0.001	0.27	650	<2.0*	<2.0*	<0.50	2200	190	200
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
Seep 9	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	<0.001	<0.001	<0.001	<0.002	0.048	0.35	620	<2.0*	<2.0*	<0.50	1500	420	460
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	<0.001	<0.001	<0.001	<0.002	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]

WQCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene)
USEPA Regional Screening Levels (April 2009) - MTBE

WQCC 20 NMAC 6.2.3103

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled - Sample was taken before implementation of Facility-Wide Monitoring Plan

* - Laboratory analyzed for combined Nitrate (As N) + Nitrite (As N) to meet holdtime

Tank #33 Effluent Analytical Results
2009

Section 8.0 - Tab 9.0

Date	Benzene (ppb)	Toluene (ppb)	EthylBen (ppb)	Xylene (ppb)	MTBE (ppb)	Toxicity Characteristic Regulatory Level for Benzene
	EPA 8260B					
	500					
1/5/2009	**5.9**	**<1.0**	**1.5**	**<2.0**	**3.7**	
2/2/2009	**1.2**	**<1.0**	**<1.0**	**<2.0**	**3.4**	
3/5/2009	**1.1**	**<1.0**	**<1.0**	**<2.0**	**4.1**	
4/1/2009	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**3.8**	
5/5/2009	**1.4**	**<1.0**	**<1.0**	**<2.0**	**3.2**	
6/1/2009	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**2.4**	
7/1/2009	**1.1**	**<1.0**	**<1.0**	**<2.0**	**2.2**	
8/3/2009	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**1.5**	
9/7/2009	**1.3**	**<1.0**	**<1.0**	**<2.0**	**<1.0**	
10/1/2009	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**<1.0**	
11/17/2009	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**1.70**	
12/2/2009	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**<1.0**	

San Juan River Analysis - 2009

Organics — Section 8.0 - Tab 10.0

Method	mg/L	Sampling Event	Date Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery	
EPA Method - 8260	Benzene (mg/L)	Semi-Annual	08/20/09	<0.001	<0.001	<0.001	<0.001	0.005 (mg/L) 40CFR141.61
		Semi-Annual	04/13/09	<0.001	<0.001	<0.001	<0.001	
		Semi-Annual	08/05/08	<0.001	<0.001	<0.001	<0.001	
		Semi-Annual	03/12/08	<0.001	<0.001	<0.001	<0.001	
	Toluene (mg/L)	Semi-Annual	08/20/09	<0.001	<0.001	<0.001	<0.001	0.75 (mg/L) WQCC 20 NMAC 6.2.3103
		Semi-Annual	04/13/09	<0.001	<0.001	<0.001	<0.001	
		Semi-Annual	08/05/08	<0.001	<0.001	<0.001	<0.001	
		Semi-Annual	03/12/08	<0.001	<0.001	<0.001	<0.001	
	EthylBen (mg/L)	Semi-Annual	08/20/09	<0.001	<0.001	<0.001	<0.001	0.7 (mg/L) 40CFR141.61
		Semi-Annual	04/13/09	<0.001	<0.001	<0.001	<0.001	
		Semi-Annual	08/05/08	<0.001	<0.001	<0.001	<0.001	
		Semi-Annual	03/12/08	<0.001	<0.001	<0.001	<0.001	
	Xylene (mg/L)	Semi-Annual	08/20/09	<0.003	<0.003	<0.003	<0.003	0.62 (mg/L) WQCC 20 NMAC 6.2.3103
		Semi-Annual	04/13/09	<0.003	<0.003	<0.003	<0.003	
		Semi-Annual	08/05/08	<0.003	<0.003	<0.003	<0.003	
		Semi-Annual	03/12/08	<0.002	<0.002	<0.002	<0.002	
	MTBE (mg/L)	Semi-Annual	08/20/09	<0.0015	<0.0015	<0.0015	<0.0015	0.012 (mg/L) USEPA Regional Screening Levels (April 2009)
		Semi-Annual	04/13/09	<0.0015	<0.0015	<0.0015	<0.0015	
		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	
EPA Method 8015B	DRO (mg/L)	Semi-Annual	08/20/09	<1.0	<1.0	<1.0	<1.0	0.20 (mg/L) TPH Screening Guidelines Table 2a
		Semi-Annual	04/13/09	<1.0	<1.0	<1.0	<1.0	
		Semi-Annual	08/05/08	<1.0	<1.0	<1.0	<1.0	
		Semi-Annual	03/12/08	<1.0	<1.0	<1.0	<1.0	
	MRO (mg/L)	Semi-Annual	08/20/09	<5.0	<5.0	<5.0	<5.0	
		Semi-Annual	04/13/09	<5.0	<5.0	<5.0	<5.0	
		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	
	GRO (mg/L)	Semi-Annual	08/20/09	<0.050	<0.050	<0.050	<0.050	
		Semi-Annual	04/13/09	<0.050	<0.050	<0.050	<0.050	
		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	

San Juan River Analysis - 2009

General Chemistry

Section 8.0 - Tab 10.0

	mg/L	Sampling Event	Date Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery	WQCC 20 NMAC 6.2.3103
EPA Method 300.0	Fluoride	Semi-Annual	08/20/09	0.22	0.10	0.23	0.22	1.60
		Semi-Annual	04/13/09	0.15	0.14	0.15	0.18	
		Semi-Annual	08/05/08	0.20	0.20	0.24	0.19	
		Semi-Annual	03/12/08	0.19	0.20	0.20	0.21	
	Chloride	Semi-Annual	08/20/09	3.2	3.1	3.5	2.8	250
		Semi-Annual	04/13/09	3.1	3.1	3.3	3.1	
		Semi-Annual	08/05/08	3.0	2.9	5.5	3.1	
		Semi-Annual	03/12/08	2.7	2.7	2.8	2.8	
	Nitrite	Semi-Annual	08/20/09	<0.10	<0.10	<0.10	<0.10	
		Semi-Annual	04/13/09	<0.10	<0.10	<0.10	<0.10	
		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	
	Bromide	Semi-Annual	08/20/09	<0.10	<0.10	<0.10	<0.10	
		Semi-Annual	04/13/09	<0.10	<0.10	<0.10	<0.10	
		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	
	Phosphorous	Semi-Annual	08/20/09	<0.50	<0.50	<0.50	<0.50	
		Semi-Annual	04/13/09	<0.50	<0.50	<0.50	<0.50	
		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	
	Sulfate	Semi-Annual	08/20/09	49	50	62	44	600
		Semi-Annual	04/13/09	72	72	73	75	
		Semi-Annual	08/05/08	60	59	130	62	
		Semi-Annual	03/12/08	52	53	53	59	
EPA 160.1	TDS	Semi-Annual	08/20/09	180	193	184	196	1000
		Semi-Annual	04/13/09	250	240	250	280	
		Semi-Annual	08/05/08	190	200	360	200	
		Semi-Annual	03/12/08	240	260	480	260	
EPA 310.1	CO3	Semi-Annual	08/20/09	82	83	83	280	
		Semi-Annual	04/13/09	78	78	76	78	
		Semi-Annual	08/05/08	85	84	85	80	
		Semi-Annual	03/12/08	85	84	84	84	
	ALK	Semi-Annual	08/20/09	82	83	83	84	
		Semi-Annual	04/13/09	87	87	85	87	
		Semi-Annual	08/05/08	89	91	95	90	
		Semi-Annual	03/12/08	85	84	84	86	
EPA 120.1	E.C. (umhos/cm)	Semi-Annual	08/20/09	310	280	270	280	
		Semi-Annual	04/13/09	330	340	340	350	
		Semi-Annual	08/05/08	300	290	450	300	
		Semi-Annual	03/12/08	280	280	280	300	

San Juan River Analysis - 2009

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	08/20/09	<0.020	<0.020	<0.020	<0.020	0.01
	Semi-Annual	04/13/09	<0.020	<0.020	<0.020	<0.020	
	Semi-Annual	08/05/08	<0.020	<0.020	<0.020	<0.020	
	Semi-Annual	03/12/08	<0.020	<0.020	<0.020	<0.020	
Barium	Semi-Annual	08/20/09	0.07	0.07	0.07	0.07	1.0
	Semi-Annual	04/13/09	0.07	0.07	0.07	0.08	
	Semi-Annual	08/05/08	0.16	0.17	0.13	0.16	
	Semi-Annual	03/12/08	0.4	0.38	0.39	0.46	
Cadmium	Semi-Annual	08/20/09	<0.002	<0.002	<0.002	<0.002	0.005
	Semi-Annual	04/13/09	<0.002	<0.002	<0.002	<0.002	
	Semi-Annual	08/05/08	<0.002	<0.002	<0.002	<0.002	
	Semi-Annual	03/12/08	<0.002	<0.002	<0.002	<0.002	
Chromium	Semi-Annual	08/20/09	<0.006	<0.006	<0.006	<0.006	0.05
	Semi-Annual	04/13/09	<0.006	<0.006	<0.006	<0.006	
	Semi-Annual	08/05/08	<0.006	<0.006	<0.006	<0.006	
	Semi-Annual	03/12/08	<0.006	<0.006	<0.006	<0.006	
Lead	Semi-Annual	08/20/09	<0.005	<0.005	<0.005	<0.005	0.015
	Semi-Annual	04/13/09	<0.005	<0.005	<0.005	<0.005	
	Semi-Annual	08/05/08	0.0057	<0.005	0.0065	<0.005	
	Semi-Annual	03/12/08	0.0051	0.0066	0.0064	0.0056	
Selenium	Semi-Annual	08/20/09	<0.050	<0.050	<0.050	<0.050	0.05
	Semi-Annual	04/13/09	<0.050	<0.050	<0.050	<0.050	
	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	
Silver	Semi-Annual	08/20/09	<0.005	<0.005	<0.005	<0.005	
	Semi-Annual	04/13/09	<0.005	<0.005	<0.005	<0.005	
	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	
Mercury	Semi-Annual	08/20/09	<0.0002	<0.0002	<0.0002	<0.0002	0.002
	Semi-Annual	04/13/09	<0.0002	<0.0002	<0.0002	<0.0002	
	Semi-Annual	08/05/08	<0.0002	<0.0002	<0.0002	<0.0002	
	Semi-Annual	03/12/08	<0.0002	<0.0002	<0.0002	<0.0002	

San Juan River Analysis- 2009

Dissolved Metals **Section 8.0 - Tab 10.0**

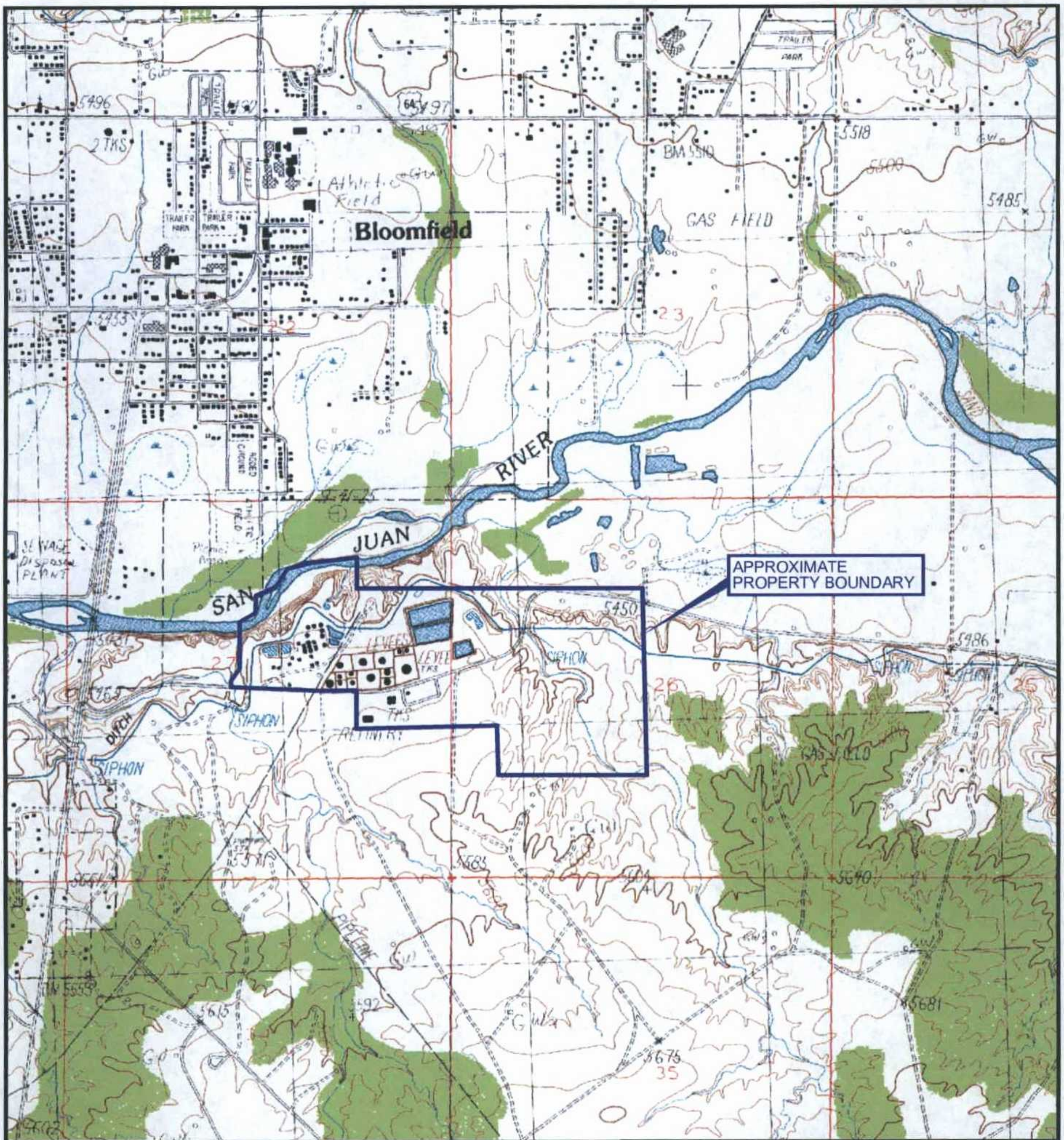
EPA Method 6010B							WQCC
mg/L	Sampling Event	Date Sampled	North of MW #46	North of MW #45	Upstream of Refinery	Downstream of Refinery	20 NMAC 6.2.3103
Arsenic	Semi-Annual	08/20/09	<0.020	<0.020	<0.020	<0.020	0.10
	Semi-Annual	04/13/09	<0.020	<0.020	<0.020	<0.020	
	Semi-Annual	08/05/08	<0.020	<0.020	<0.020	<0.020	
	Semi-Annual	03/12/08	<0.020	<0.020	<0.020	<0.020	
Barium	Semi-Annual	08/20/09	0.060	0.041	0.060	0.063	1.00
	Semi-Annual	04/13/09	0.064	0.068	0.065	0.064	
	Semi-Annual	08/05/08	0.077	0.081	0.130	0.080	
	Semi-Annual	03/12/08	0.086	0.080	0.085	0.081	
Cadmium	Semi-Annual	08/20/09	<0.002	<0.002	<0.002	<0.002	0.01
	Semi-Annual	04/13/09	<0.002	<0.002	<0.002	<0.002	
	Semi-Annual	08/05/08	<0.002	<0.002	<0.002	<0.002	
	Semi-Annual	03/12/08	<0.002	<0.002	<0.002	<0.002	
Calcium	Semi-Annual	08/20/09	30	22	28	31	
	Semi-Annual	04/13/09	36	35	35	38	
	Semi-Annual	08/05/08	33	34	39	34	
	Semi-Annual	03/12/08	28	28	29	28	
Chromium	Semi-Annual	08/20/09	<0.006	<0.006	<0.006	<0.006	0.05
	Semi-Annual	04/13/09	<0.006	<0.006	<0.006	<0.006	
	Semi-Annual	08/05/08	<0.006	<0.006	<0.006	<0.006	
	Semi-Annual	03/12/08	0.007	<0.006	0.007	<0.006	
Copper	Semi-Annual	08/20/09	<0.006	<0.006	<0.006	<0.006	1.00
	Semi-Annual	04/13/09	<0.006	<0.006	<0.006	<0.006	
	Semi-Annual	08/05/08	<0.006	<0.006	<0.006	<0.006	
	Semi-Annual	03/12/08	<0.006	<0.006	<0.006	<0.006	
Iron	Semi-Annual	08/20/09	<0.02	<0.02	<0.02	<0.02	1.00
	Semi-Annual	04/13/09	0.030	0.032	0.021	0.04	
	Semi-Annual	08/05/08	0.059	0.068	0.074	0.09	
	Semi-Annual	03/12/08	0.360	3.800	0.490	0.33	
Lead	Semi-Annual	08/20/09	<0.005	<0.005	<0.005	<0.005	0.05
	Semi-Annual	04/13/09	<0.005	<0.005	<0.005	<0.005	
	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	
Magnesium	Semi-Annual	08/20/09	5.6	4.1	5.4	5.7	
	Semi-Annual	04/13/09	6.1	6.1	6.2	6.4	
	Semi-Annual	08/05/08	5.5	5.7	7.0	5.5	
	Semi-Annual	03/12/08	4.5	4.9	4.7	4.5	
Manganese	Semi-Annual	08/20/09	0.004	0.004	0.003	0.006	0.20
	Semi-Annual	04/13/09	0.017	0.180	0.023	0.046	
	Semi-Annual	08/05/08	0.008	0.012	0.073	0.012	
	Semi-Annual	03/12/08	0.040	0.037	0.038	0.035	

San Juan River Analysis- 2009

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
Potassium	Semi-Annual	08/20/09	1.7	1.1	1.6	1.6	
	Semi-Annual	04/13/09	1.7	1.6	1.7	1.8	
	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	
Selenium	Semi-Annual	08/20/09	<0.050	<0.050	<0.050	<0.050	0.05
	Semi-Annual	04/13/09	<0.050	<0.050	<0.050	<0.050	
	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	
Silver	Semi-Annual	08/20/09	<0.0050	<0.0050	<0.0050	<0.0050	0.05
	Semi-Annual	04/13/09	<0.0050	<0.0050	<0.0050	<0.0050	
	Semi-Annual	08/05/08	<0.0050	<0.0050	<0.0050	<0.0050	
	Semi-Annual	03/12/08	<0.0050	<0.0050	<0.0050	<0.0050	
Sodium	Semi-Annual	08/20/09	16	11	14	16	
	Semi-Annual	04/13/09	23	22	25	24	
	Semi-Annual	08/05/08	19	19	49	20	
	Semi-Annual	03/12/08	19	21	20	21	
Uranium	Semi-Annual	08/20/09	<0.001	<0.001	<0.001	<0.001	0.03
	Semi-Annual	04/13/09	<0.001	<0.001	<0.001	<0.001	
	Semi-Annual	08/05/08	<0.001	<0.00	0.0013	<0.00	
	Semi-Annual	03/12/08	<0.10	<0.10	<0.10	<0.10	
Zinc	Semi-Annual	08/20/09	<0.05	<0.05	<0.05	<0.05	10
	Semi-Annual	04/13/09	0.066	0.052	0.12	0.082	
	Semi-Annual	08/05/08	<0.05	<0.05	<0.05	<0.05	
	Semi-Annual	03/12/08	<0.05	<0.05	<0.05	<0.05	

Section 9.0 Figures



Map Source: USGS 7.5 Min. Quad Sheet BLOOMFIELD, NM., 1985.

0 2000
SCALE IN FEET

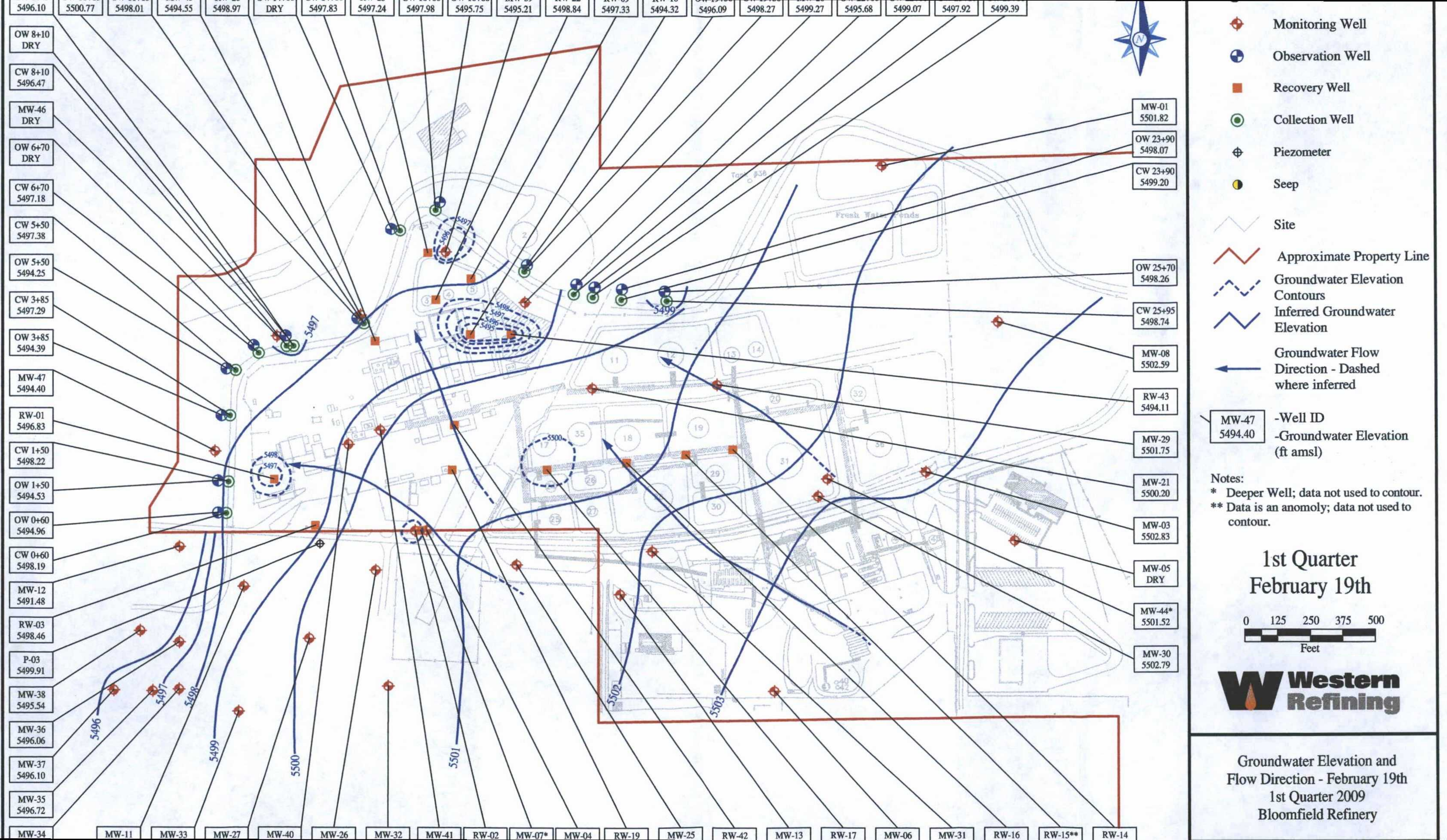
QUADRANGLE LOCATION

Western Refining
WESTERN REFINING SOUTHWEST

PROJ. NO.: Western Refining	DATE: 01/06/10	FILE: WestRef-A25

FIGURE 1
SITE LOCATION MAP
BLOOMFIELD REFINERY

RPS
404 Camp Craft Road
Austin, Texas 78746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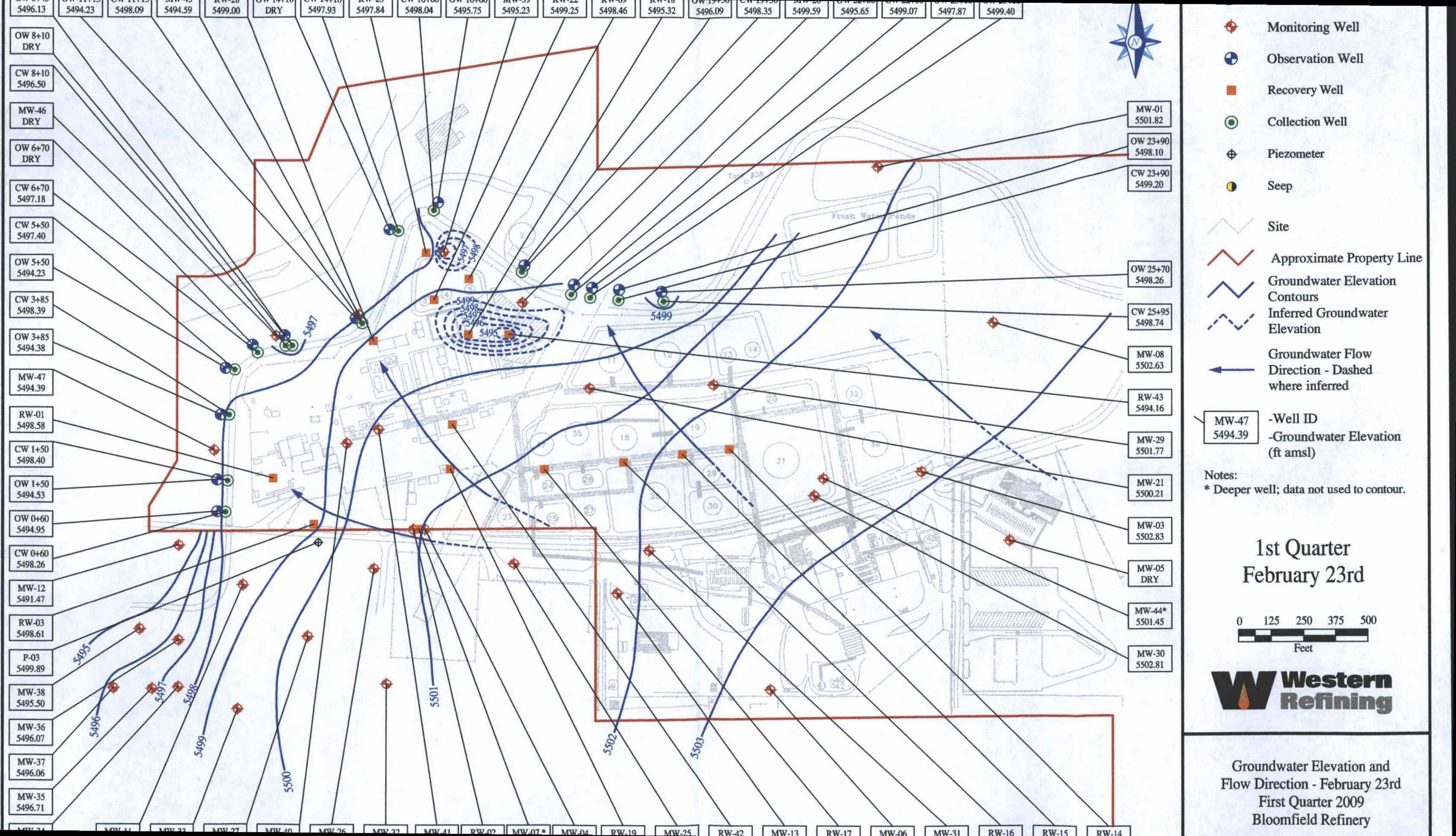
5498.84
5497.33
5494.32
5496.09
5498.27
5499.27
5495.68
5499.07
5497.92
5499.39
OW 8+10 DRY
CW 8+10 5496.47
MW-46 DRY
OW 6+70 DRY
CW 6+70 5497.18
CW 5+50 5497.38
OW 5+50 5494.25
CW 3+85 5497.29
OW 3+85 5494.39
MW-47 5494.40
RW-01 5496.83
CW 1+50 5498.22
OW 1+50 5494.53
OW 0+60 5494.96
CW 0+60 5498.19
MW-12 5491.48
RW-03 5498.46
P-03 5499.91
MW-38 5495.54
MW-36 5496.06
MW-37 5496.10
MW-35 5496.72
MW-34
MW-11
MW-33
MW-27
MW-40
MW-26
MW-32
MW-41
RW-02
MW-07*
MW-04
RW-19
MW-25
RW-42
MW-13
RW-17
MW-06
MW-31
RW-16
RW-15**
RW-14
MW-01 5501.82
OW 23+90 5498.07
CW 23+90 5499.20
OW 25+70 5498.26
CW 25+95 5498.74
MW-08 5502.59
RW-43 5494.11
MW-29 5501.75
MW-21 5500.20
MW-03 5502.83
MW-05 DRY
MW-44* 5501.52
MW-30 5502.79
5496
5497
5498
5499
5500
5501
5502
5503
Fresh Water Ponds
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-47 5494.40 -Well ID -Groundwater Elevation (ft amsl)
Notes:
* Deeper Well; data not used to contour.
** Data is an anomoly; data not used to contour.
1st Quarter
February 19th
0 125 250 375 500
Feet
Western Refining
Groundwater Elevation and Flow Direction - February 19th
1st Quarter 2009
Bloomfield Refinery



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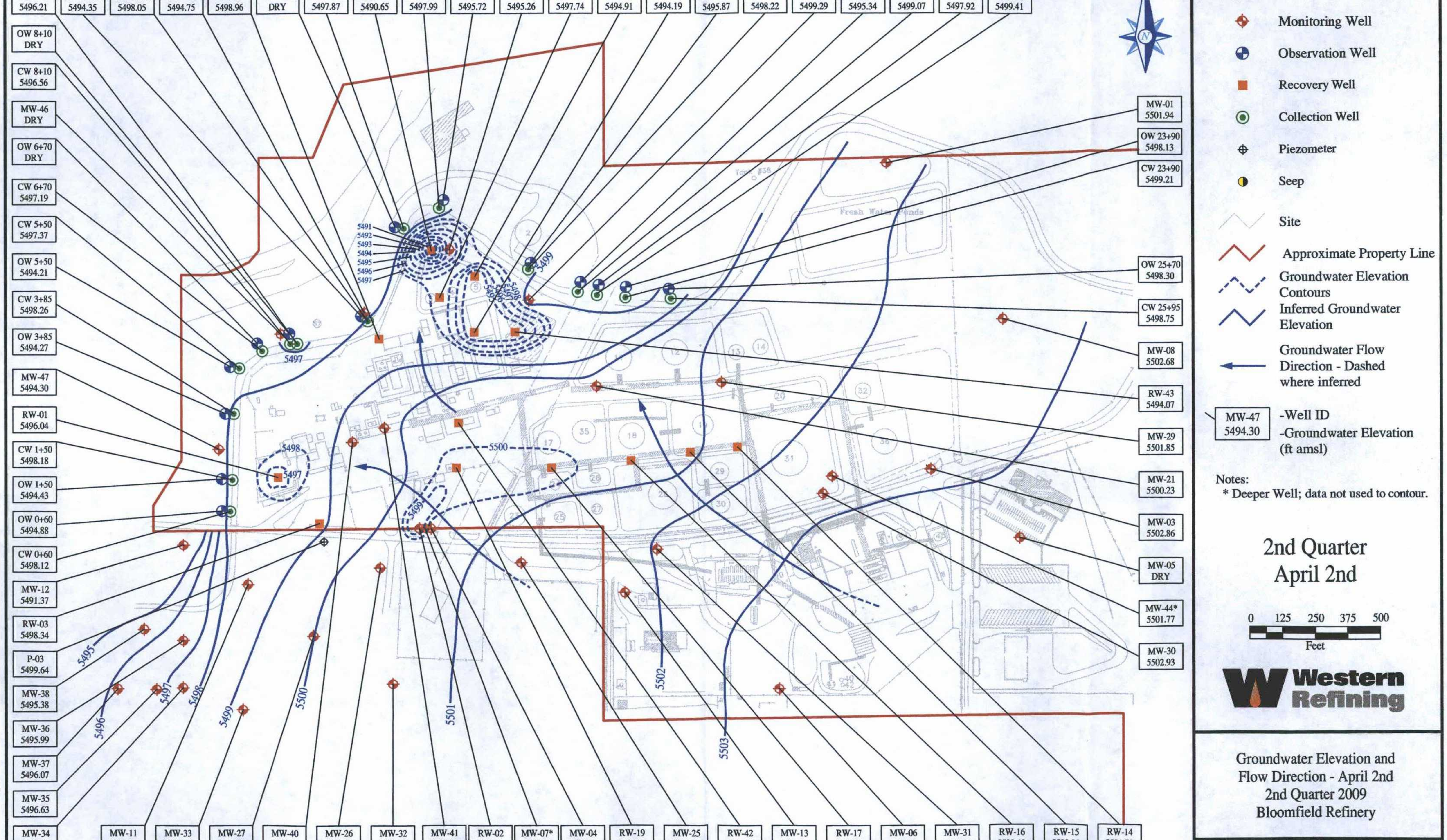
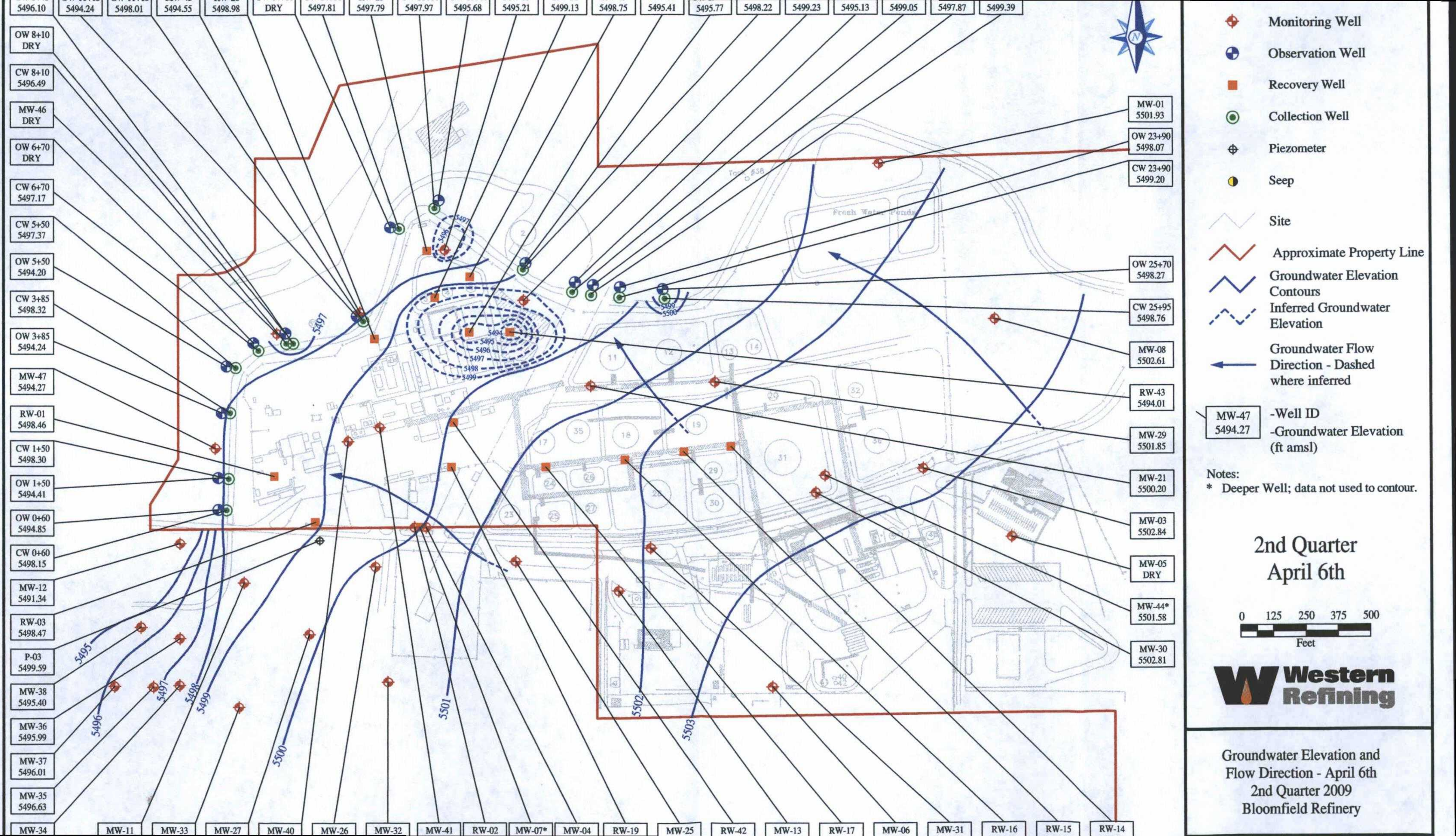
5495.75
5495.23
5499.25
5498.46
5495.32
5496.09
5498.35
5499.59
5495.65
5499.07
5497.87
5499.40
OW 8+10 DRY
CW 8+10 5496.50
MW-46 DRY
OW 6+70 DRY
CW 6+70 5497.18
CW 5+50 5497.40
OW 5+50 5494.23
CW 3+85 5498.39
OW 3+85 5494.38
MW-47 5494.39
RW-01 5498.58
CW 1+50 5498.40
OW 1+50 5494.53
OW 0+60 5494.95
CW 0+60 5498.26
MW-12 5491.47
RW-03 5498.61
P-03 5499.89
MW-38 5495.50
MW-36 5496.07
MW-37 5496.06
MW-35 5496.71
MW-11
MW-33
MW-27
MW-40
MW-26
MW-32
MW-41
RW-02
MW-07*
MW-04
RW-19
MW-25
RW-42
MW-13
RW-17
MW-06
MW-31
RW-16
RW-15
RW-14
MW-01 5501.82
OW 23+90 5498.10
CW 23+90 5499.20
OW 25+70 5498.26
CW 25+95 5498.74
MW-08 5502.63
RW-43 5494.16
MW-29 5501.77
MW-21 5500.21
MW-03 5502.83
MW-05 DRY
MW-44* 5501.45
MW-30 5502.81
5495
5496
5497
5498
5499
5500
5501
5502
5503
Fresh Water Ponds
N
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-47 5494.39
-Well ID
-Groundwater Elevation (ft amsl)
Notes:
* Deeper well; data not used to contour.
1st Quarter
February 23rd
0 125 250 375 500
Feet
Western Refining
Groundwater Elevation and Flow Direction - February 23rd
First Quarter 2009
Bloomfield Refinery



Groundwater Elevation and Flow Direction - April 2nd
2nd Quarter 2009
Bloomfield Refinery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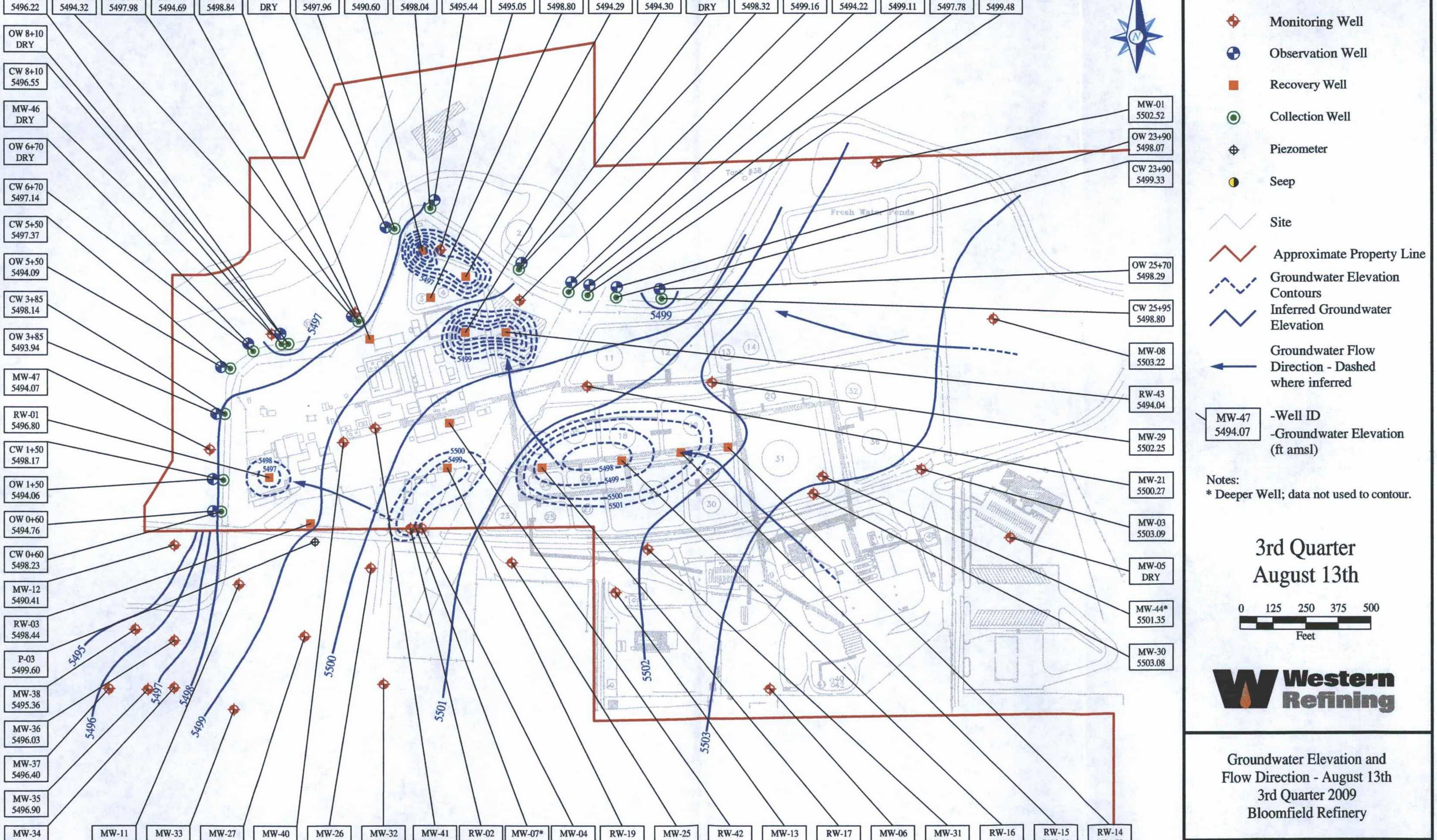
5495.41
5495.77
5498.22
5499.23
5495.13
5499.05
5497.87
5499.39
OW 8+10 DRY
CW 8+10 5496.49
MW-46 DRY
OW 6+70 DRY
CW 6+70 5497.17
CW 5+50 5497.37
OW 5+50 5494.20
CW 3+85 5498.32
OW 3+85 5494.24
MW-47 5494.27
RW-01 5498.46
CW 1+50 5498.30
OW 1+50 5494.41
OW 0+60 5494.85
CW 0+60 5498.15
MW-12 5491.34
RW-03 5498.47
P-03 5499.59
MW-38 5495.40
MW-36 5495.99
MW-37 5496.01
MW-35 5496.63
MW-34
MW-11
MW-33
MW-27
MW-40
MW-26
MW-32
MW-41
RW-02
MW-07*
MW-04
RW-19
MW-25
RW-42
MW-13
RW-17
MW-06
MW-31
RW-16
RW-15
RW-14
MW-01 5501.93
OW 23+90 5498.07
CW 23+90 5499.20
OW 25+70 5498.27
CW 25+95 5498.76
MW-08 5502.61
RW-43 5494.01
MW-29 5501.85
MW-21 5500.20
MW-03 5502.84
MW-05 DRY
MW-44* 5501.58
MW-30 5502.81
5494
5495
5496
5497
5498
5499
5500
5501
5502
5503
Fresh Water Ponds
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-47 5494.27
-Well ID
-Groundwater Elevation (ft amsl)
Notes:
* Deeper Well; data not used to contour.
2nd Quarter
April 6th
0 125 250 375 500
Feet
Western Refining
Groundwater Elevation and Flow Direction - April 6th
2nd Quarter 2009
Bloomfield Refinery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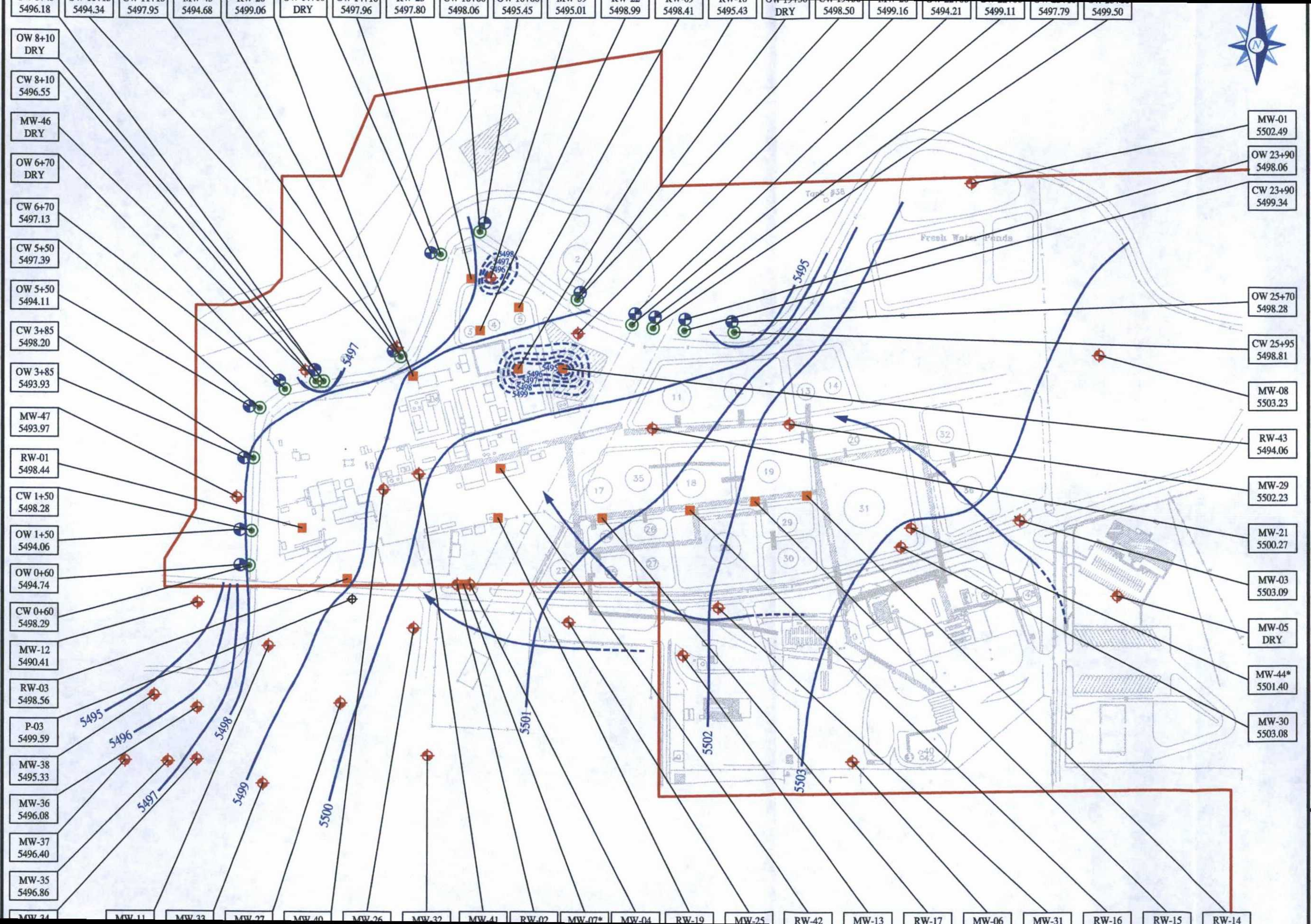
5494.30
DRY
5498.32
5499.16
5494.22
5499.11
5497.78
5499.48
OW 8+10 DRY
CW 8+10 5496.55
MW-46 DRY
OW 6+70 DRY
CW 6+70 5497.14
CW 5+50 5497.37
OW 5+50 5494.09
CW 3+85 5498.14
OW 3+85 5493.94
MW-47 5494.07
RW-01 5496.80
CW 1+50 5498.17
OW 1+50 5494.06
OW 0+60 5494.76
CW 0+60 5498.23
MW-12 5490.41
RW-03 5498.44
P-03 5499.60
MW-38 5495.36
MW-36 5496.03
MW-37 5496.40
MW-35 5496.90
MW-34
MW-11
MW-33
MW-27
MW-40
MW-26
MW-32
MW-41
RW-02
MW-07*
MW-04
RW-19
MW-25
RW-42
MW-13
RW-17
MW-06
MW-31
RW-16
RW-15
RW-14
MW-01 5502.52
OW 23+90 5498.07
CW 23+90 5499.33
OW 25+70 5498.29
CW 25+95 5498.80
MW-08 5503.22
RW-43 5494.04
MW-29 5502.25
MW-21 5500.27
MW-03 5503.09
MW-05 DRY
MW-44* 5501.35
MW-30 5503.08
5495
5496
5497
5498
5499
5500
5501
5502
5503
Fresh Water Ponds
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-47 5494.07
-Well ID
-Groundwater Elevation (ft amsl)
Notes:
* Deeper Well; data not used to contour.
3rd Quarter
August 13th
0 125 250 375 500
Feet
Western Refining
Groundwater Elevation and Flow Direction - August 13th
3rd Quarter 2009
Bloomfield Refinery



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-47 5493.97 -Well ID -Groundwater Elevation (ft amsl)

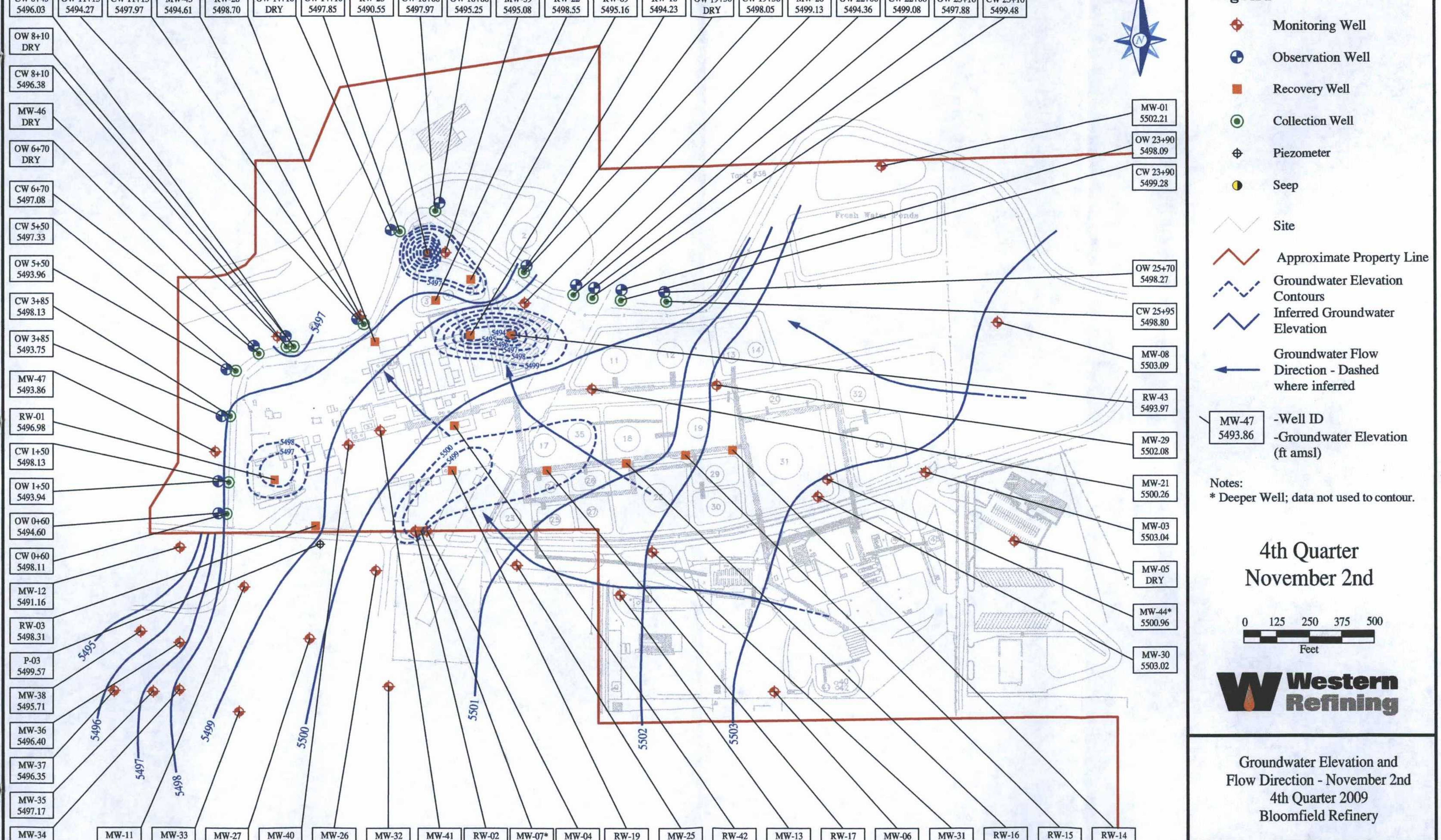
Notes:
* Deeper Well; data not used to contour.

3rd Quarter
August 17th

0 125 250 375 500
Feet

Western Refining

Groundwater Elevation and Flow Direction - August 17th
3rd Quarter 2009
Bloomfield Refinery



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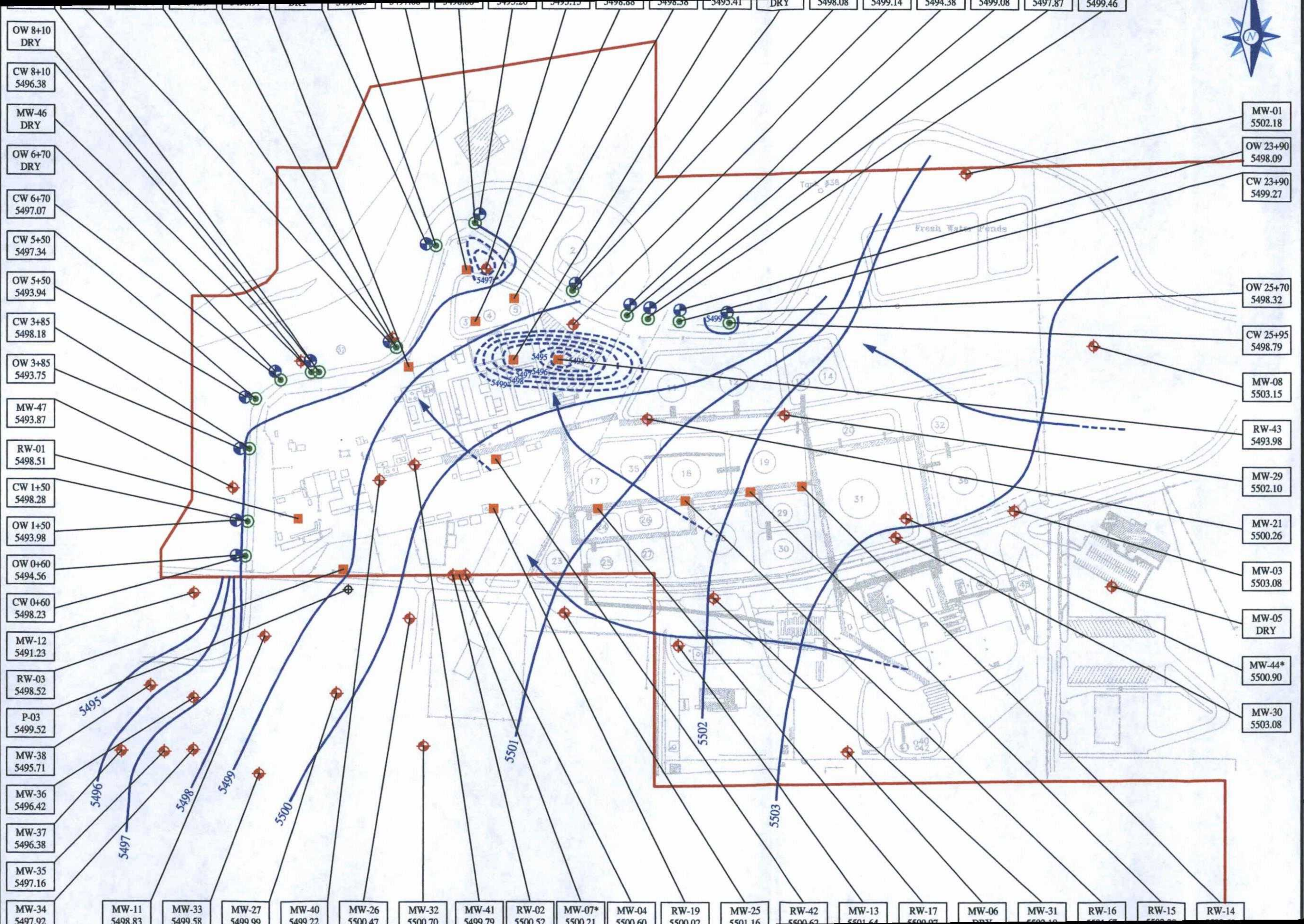
5495.08
5498.55
5495.16
5494.23
DRY
5498.05
5499.13
5494.36
5499.08
5497.88
5499.48
OW 8+10 DRY
CW 8+10 5496.38
MW-46 DRY
OW 6+70 DRY
CW 6+70 5497.08
CW 5+50 5497.33
OW 5+50 5493.96
CW 3+85 5498.13
OW 3+85 5493.75
MW-47 5493.86
RW-01 5496.98
CW 1+50 5498.13
OW 1+50 5493.94
OW 0+60 5494.60
CW 0+60 5498.11
MW-12 5491.16
RW-03 5498.31
P-03 5499.57
MW-38 5495.71
MW-36 5496.40
MW-37 5496.35
MW-35 5497.17
MW-34
MW-01 5502.21
OW 23+90 5498.09
CW 23+90 5499.28
OW 25+70 5498.27
CW 25+95 5498.80
MW-08 5503.09
RW-43 5493.97
MW-29 5502.08
MW-21 5500.26
MW-03 5503.04
MW-05 DRY
MW-44* 5500.96
MW-30 5503.02
MW-11
MW-33
MW-27
MW-40
MW-26
MW-32
MW-41
RW-02
MW-07*
MW-04
RW-19
MW-25
RW-42
MW-13
RW-17
MW-06
MW-31
RW-16
RW-15
RW-14
Fresh Water Ponds
5495
5496
5497
5498
5499
5500
5501
5502
5503
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-47 5493.86
-Well ID
-Groundwater Elevation (ft amsl)
Notes:
* Deeper Well; data not used to contour.
4th Quarter
November 2nd
0 125 250 375 500
Feet
Western Refining
Groundwater Elevation and Flow Direction - November 2nd
4th Quarter 2009
Bloomfield Refinery



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-47 5493.87 -Well ID -Groundwater Elevation (ft amsl)

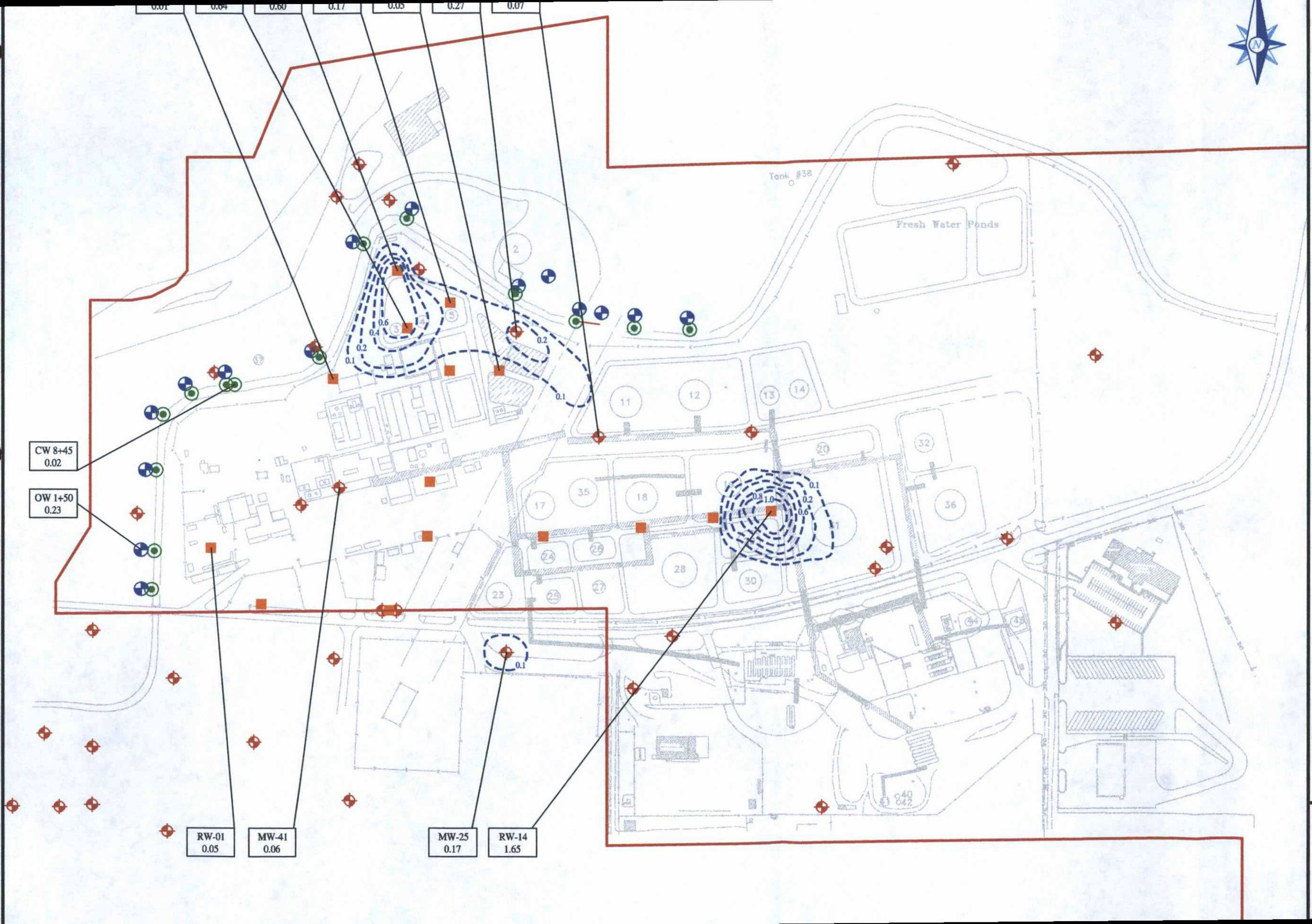
Notes:
* Deeper Well; data not used to contour

4th Quarter November 9th

0 125 250 375 500
Feet

Western Refining

Groundwater Elevation and Flow Direction - November 9th 4th Quarter 2009 Bloomfield Refinery



Monitoring Well

Observation Well

Recovery Well

Collection Well

February 2009
Product Thickness

Site

Approximate Property Line

RW-14
1.65

-Well ID
-Product Thickness (feet)

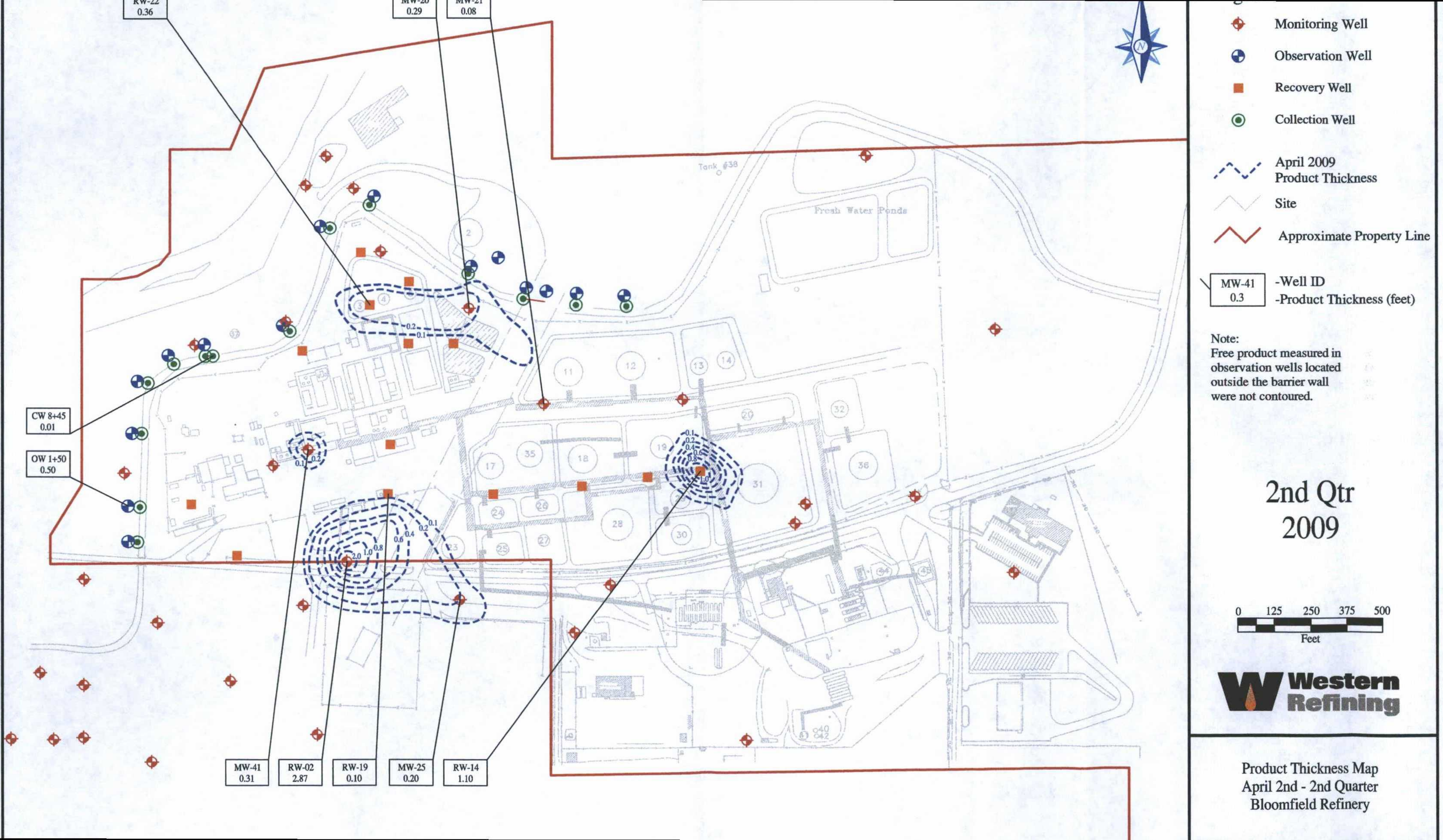
Note:
Free product measured in observation wells located outside the barrier wall were not contoured.

1st Qtr 2009

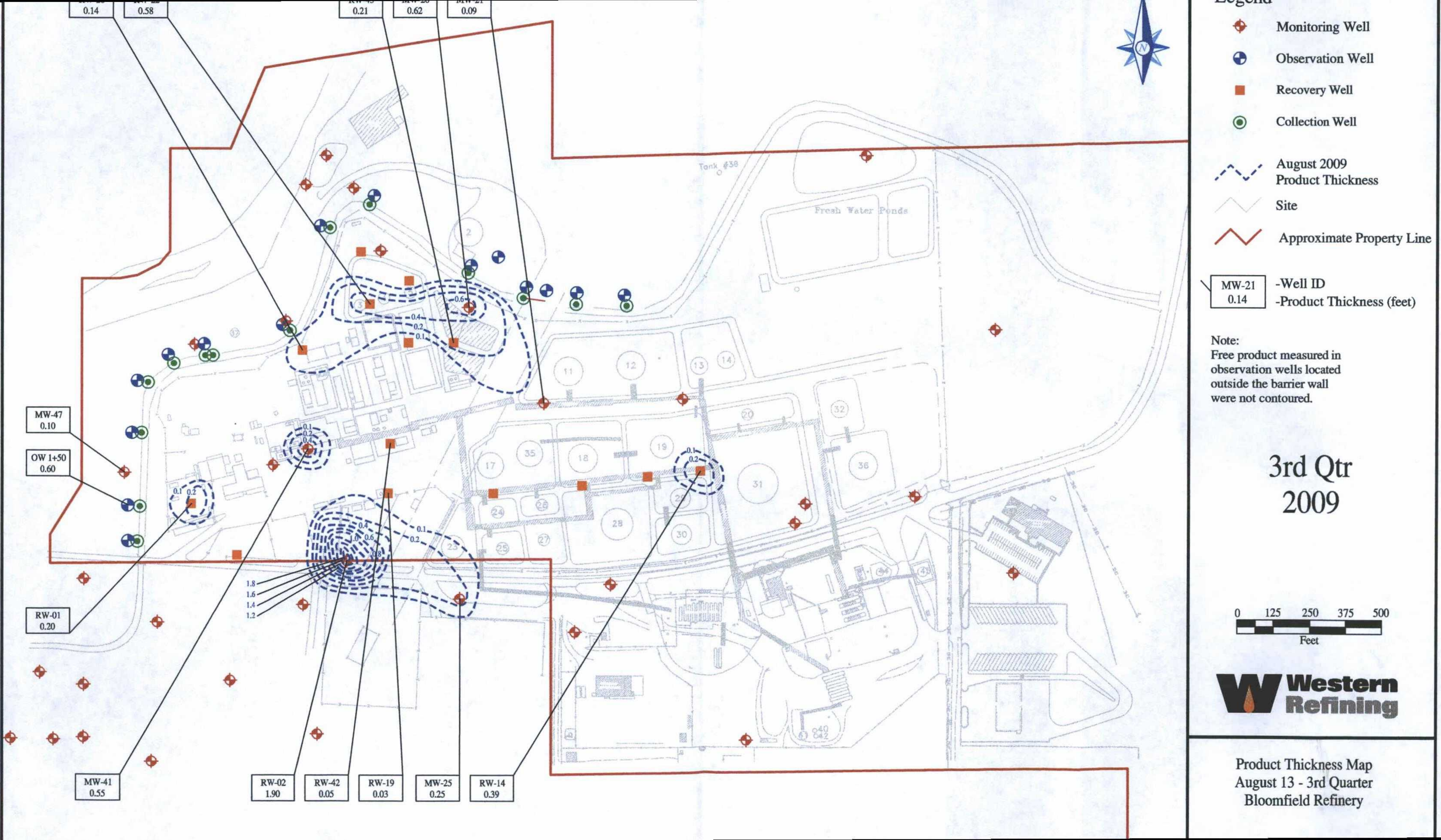
0 125 250 375 500
Feet

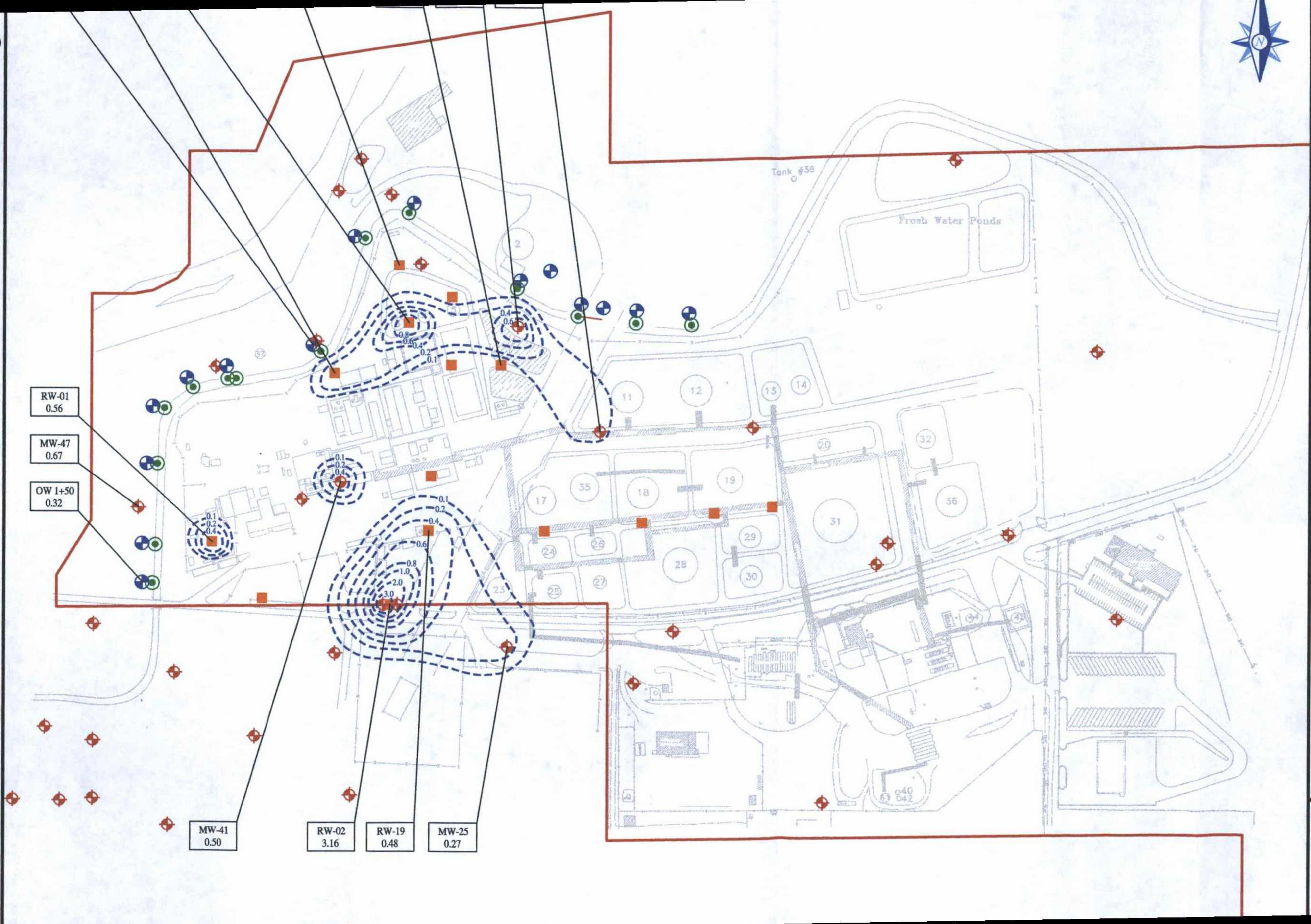
Western Refining

Product Thickness Map
February 19th - 1st Quarter
Bloomfield Refinery



RW-22
0.36
MW-20
0.29
MW-21
0.08
Monitoring Well
Observation Well
Recovery Well
Collection Well
April 2009
Product Thickness
Site
Approximate Property Line
MW-41
0.3
-Well ID
-Product Thickness (feet)
Note:
Free product measured in observation wells located outside the barrier wall were not contoured.
Tank #38
Fresh Water Ponds
CW 8+45
0.01
OW 1+50
0.50
MW-41
0.31
RW-02
2.87
RW-19
0.10
MW-25
0.20
RW-14
1.10
2nd Qtr
2009
0 125 250 375 500
Feet
Western Refining
Product Thickness Map
April 2nd - 2nd Quarter
Bloomfield Refinery


Legend
Monitoring Well
Observation Well
Recovery Well
Collection Well
August 2009 Product Thickness
Site
Approximate Property Line
MW-21 0.14
-Well ID
-Product Thickness (feet)
Note:
Free product measured in observation wells located outside the barrier wall were not contoured.
3rd Qtr 2009
0 125 250 375 500
Feet
Western Refining
Product Thickness Map
August 13 - 3rd Quarter
Bloomfield Refinery
0.14
0.58
0.21
0.62
0.09
MW-47 0.10
OW 1+50 0.60
RW-01 0.20
MW-41 0.55
RW-02 1.90
RW-42 0.05
RW-19 0.03
MW-25 0.25
RW-14 0.39
Tank #38
Fresh Water Ponds



Monitoring Well

Observation Well

Recovery Well

Collection Well

November 2009
Product Thickness

Site

Approximate Property Line

MW-21
0.14

-Well ID
-Product Thickness (feet)

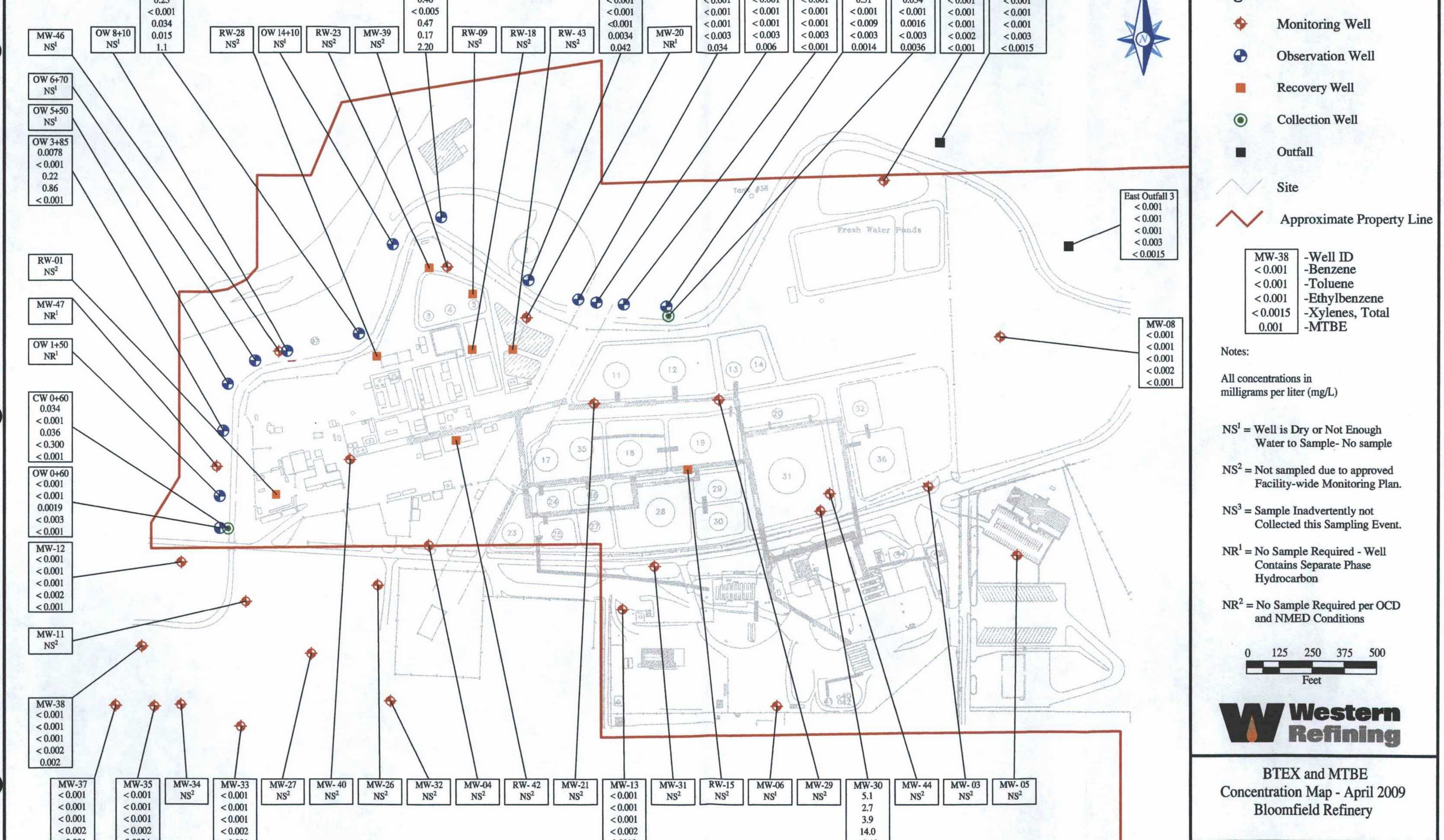
Note:
Free product measured in observation wells located outside the barrier wall were not contoured.

4th Qtr
2009

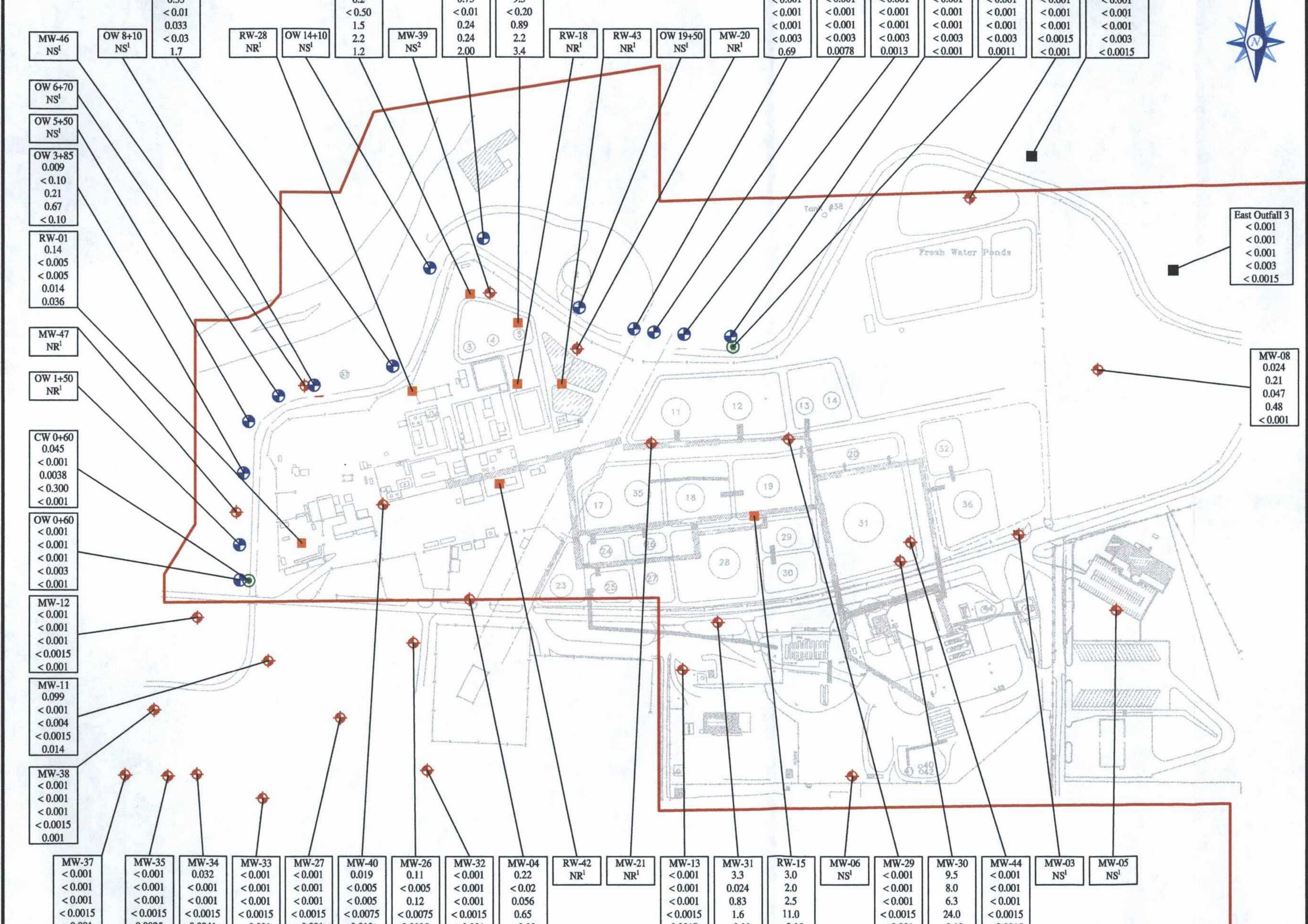
0 125 250 375 500
Feet

Western Refining

Product Thickness Map
November 2nd - 4th Quarter
Bloomfield Refinery



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)
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 Conditions
0 125 250 375 500
Feet
Western Refining
BTEX and MTBE Concentration Map - April 2009 Bloomfield Refinery
MW-46 NS1
OW 8+10 NS1
< 0.001 0.034 0.015 1.1
RW-28 NS2
OW 14+10 NS1
RW-23 NS2
MW-39 NS2
< 0.005 0.47 0.17 2.20
RW-09 NS2
RW-18 NS2
RW- 43 NS2
< 0.001 <0.001 0.0034 0.042
MW-20 NR1
< 0.001 < 0.001 < 0.003 0.034
< 0.001 < 0.001 < 0.003 0.006
< 0.001 < 0.001 < 0.003 < 0.001
< 0.001 < 0.009 < 0.003 0.0014
< 0.001 0.0016 < 0.003 0.0036
< 0.001 < 0.001 < 0.002 < 0.001
< 0.001 < 0.001 < 0.003 < 0.0015
OW 6+70 NS1
OW 5+50 NS1
OW 3+85 0.0078 < 0.001 0.22 0.86 < 0.001
RW-01 NS2
MW-47 NR1
OW 1+50 NR1
CW 0+60 0.034 < 0.001 0.036 < 0.300 < 0.001
OW 0+60 < 0.001 < 0.001 0.0019 < 0.003 < 0.001
MW-12 < 0.001 < 0.001 < 0.001 < 0.002 < 0.001
MW-11 NS2
MW-38 < 0.001 < 0.001 < 0.001 < 0.002 0.002
East Outfall 3 < 0.001 < 0.001 < 0.001 < 0.003 < 0.0015
MW-08 < 0.001 < 0.001 < 0.001 < 0.002 < 0.001
Tank #38
Fresh Water Ponds
MW-37 < 0.001 < 0.001 < 0.001 < 0.002
MW-35 < 0.001 < 0.001 < 0.001 < 0.002
MW-34 NS2
MW-33 < 0.001 < 0.001 < 0.001 < 0.002
MW-27 NS2
MW- 40 NS2
MW-26 NS2
MW-32 NS2
MW-04 NS2
RW- 42 NS2
MW-21 NS2
MW-13 < 0.001 < 0.001 < 0.001 < 0.002
MW-31 NS2
RW-15 NS2
MW-06 NS1
MW-29 NS2
MW-30 5.1 2.7 3.9 14.0
MW- 44 NS2
MW- 03 NS2
MW- 05 NS2



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[1] = Well is Dry or Not Enough Water to Sample- No sample

NS[2] = Not sampled due to approved Facility-wide Monitoring Plan.

NS[3] = Sample Inadvertently not Collected this Sampling Event.

NR[1] = No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED Conditions

0 125 250 375 500

Feet

Western Refining

BTEX and MTBE Concentration Map - August 2009

Bloomfield Refinery

San Juan River Bluff – Seep Identification

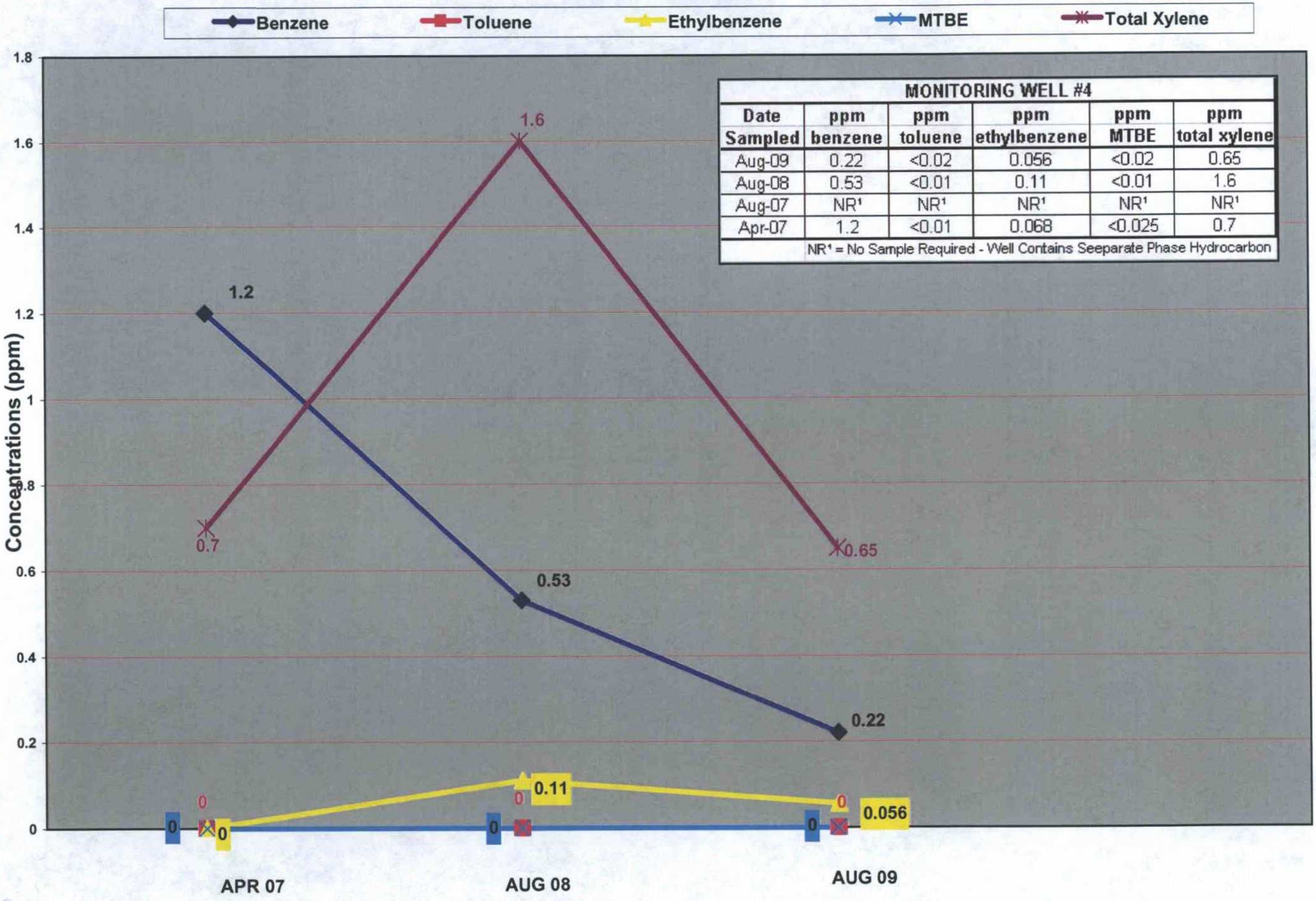
Seeps are Designated by Numbers 1- 9

Figure 18

Approximate Scale

Section 10.0 BTEX & MTBE Concentration vs Time

Monitoring Well #4

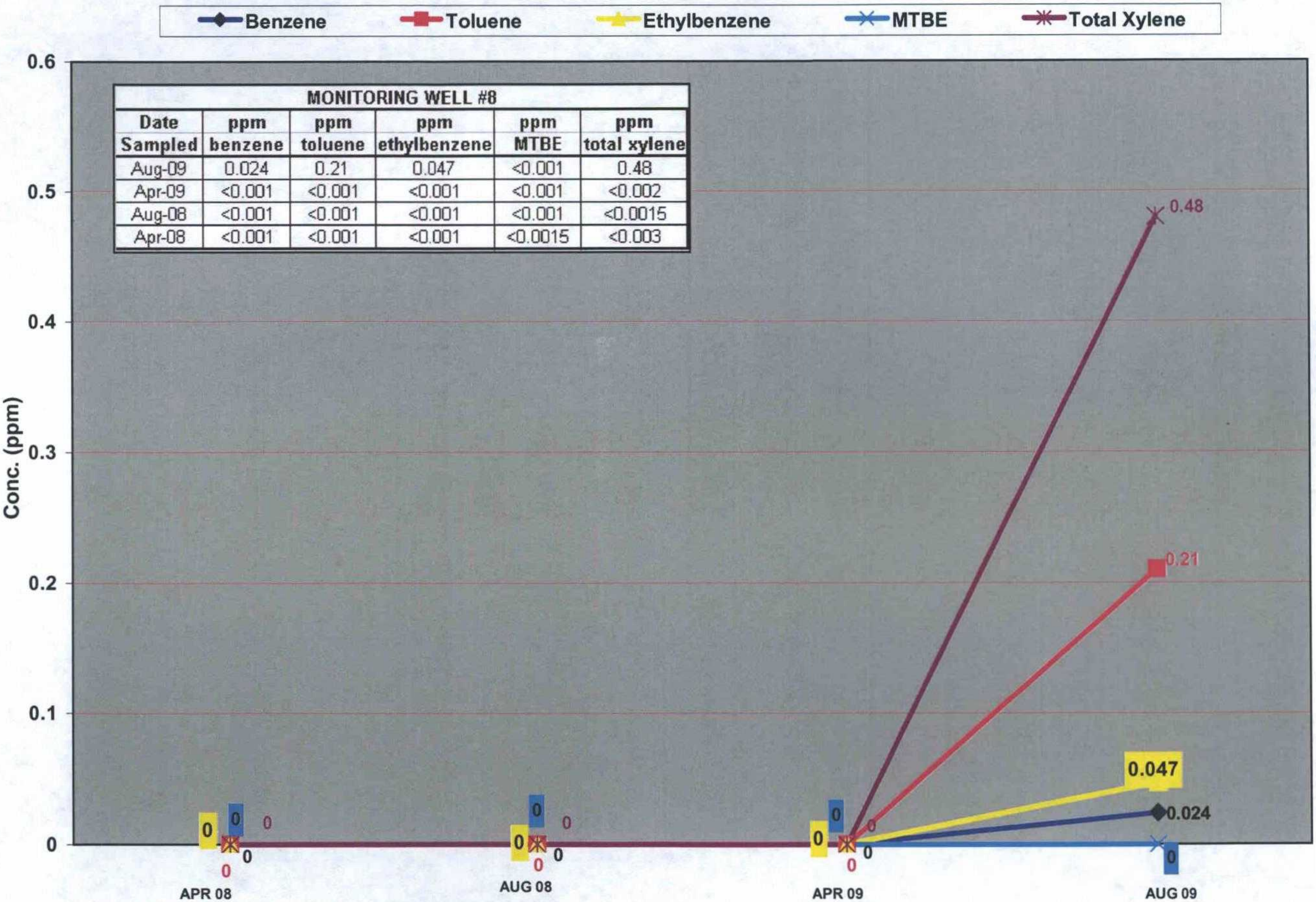


MONITORING WELL #4					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	0.22	<0.02	0.056	<0.02	0.65
Aug-08	0.53	<0.01	0.11	<0.01	1.6
Aug-07	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
Apr-07	1.2	<0.01	0.068	<0.025	0.7

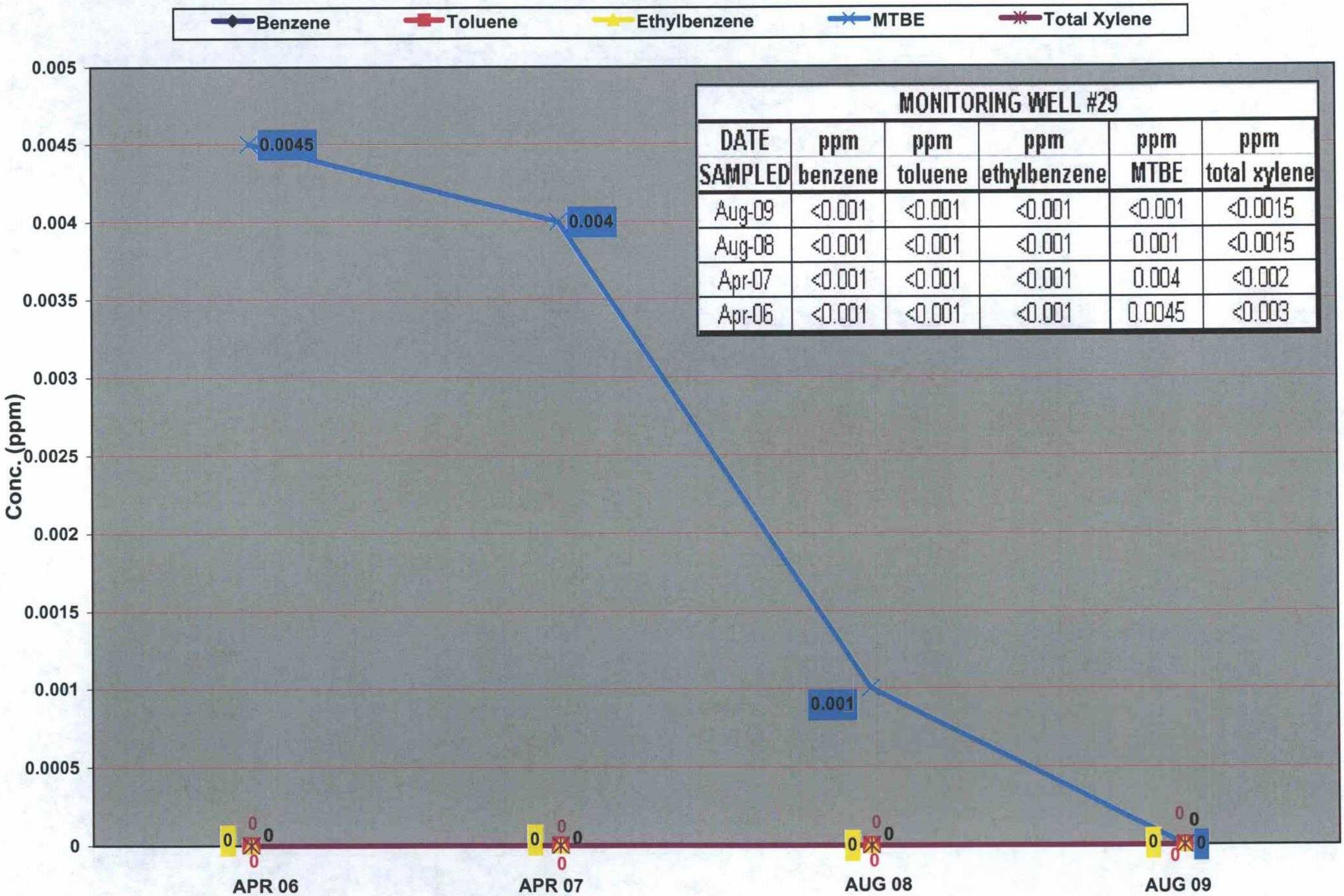
NR[1] = No Sample Required - Well Contains Seeparate Phase Hydrocarbon

Monitoring Well #8

MONITORING WELL #8					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	0.024	0.21	0.047	<0.001	0.48
Apr-09	<0.001	<0.001	<0.001	<0.001	<0.002
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Apr-08	<0.001	<0.001	<0.001	<0.0015	<0.003

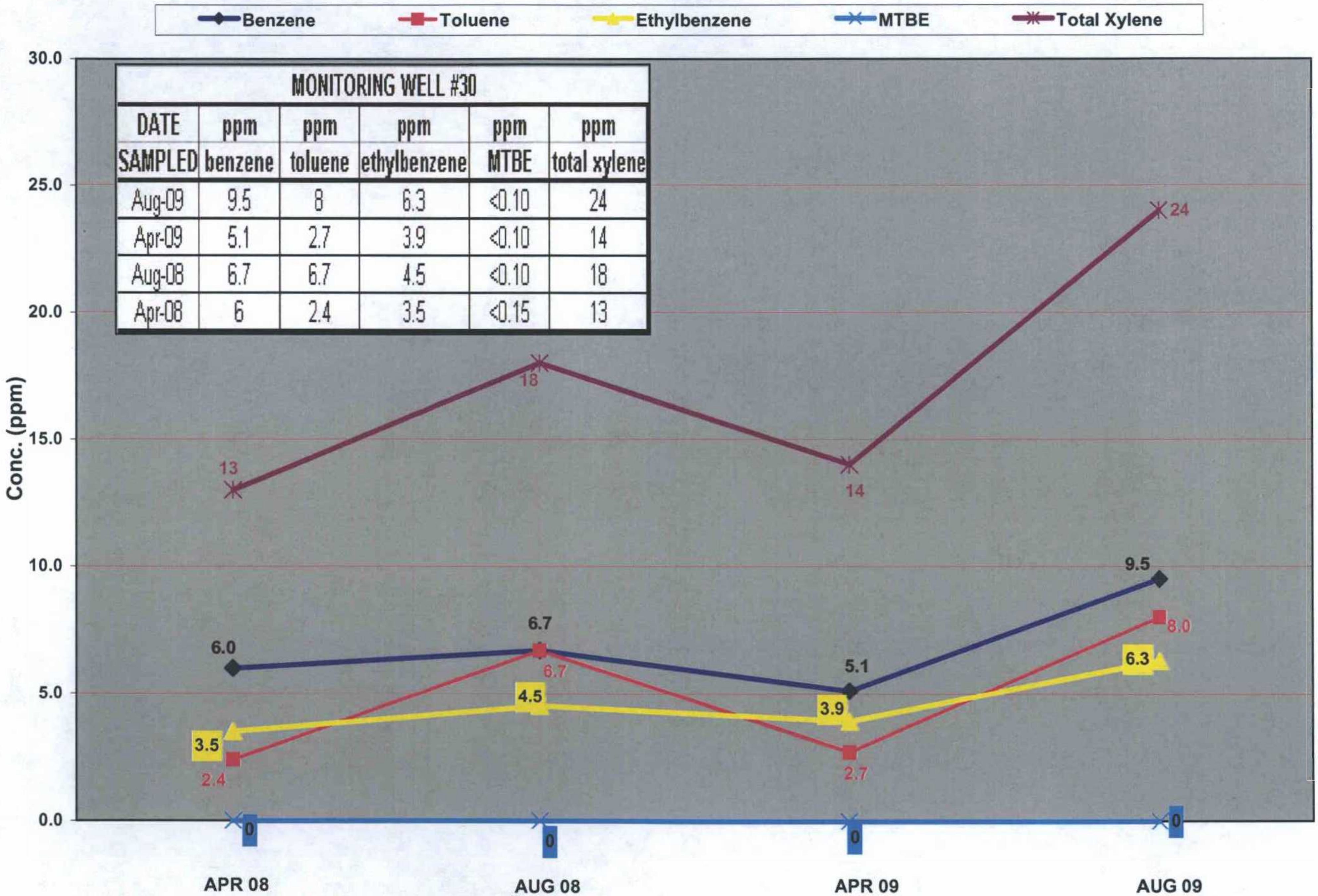


Monitoring Well #29



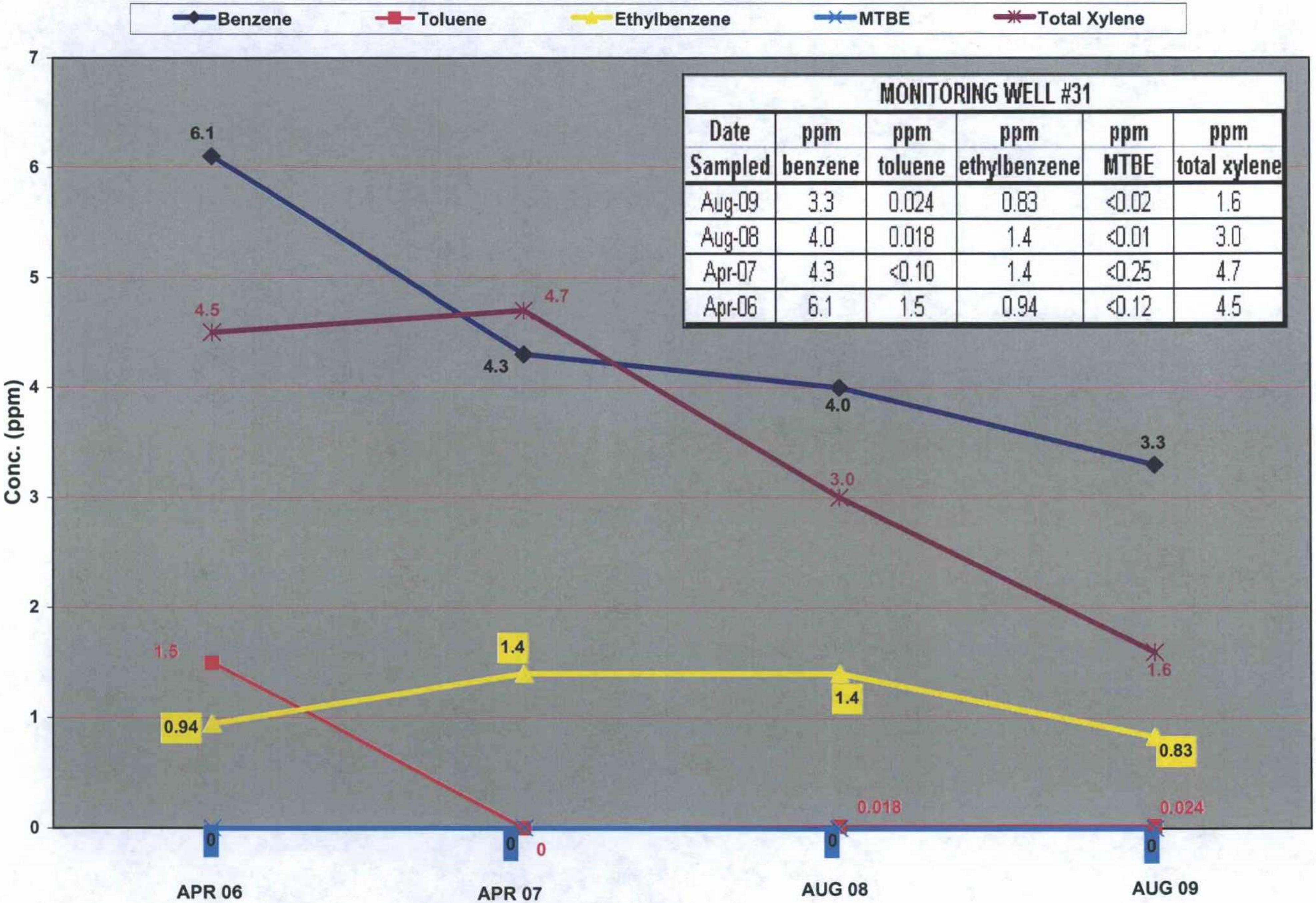
MONITORING WELL #29					
DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.001	<0.0015
Aug-08	<0.001	<0.001	<0.001	0.001	<0.0015
Apr-07	<0.001	<0.001	<0.001	0.004	<0.002
Apr-06	<0.001	<0.001	<0.001	0.0045	<0.003

Monitoring Well #30



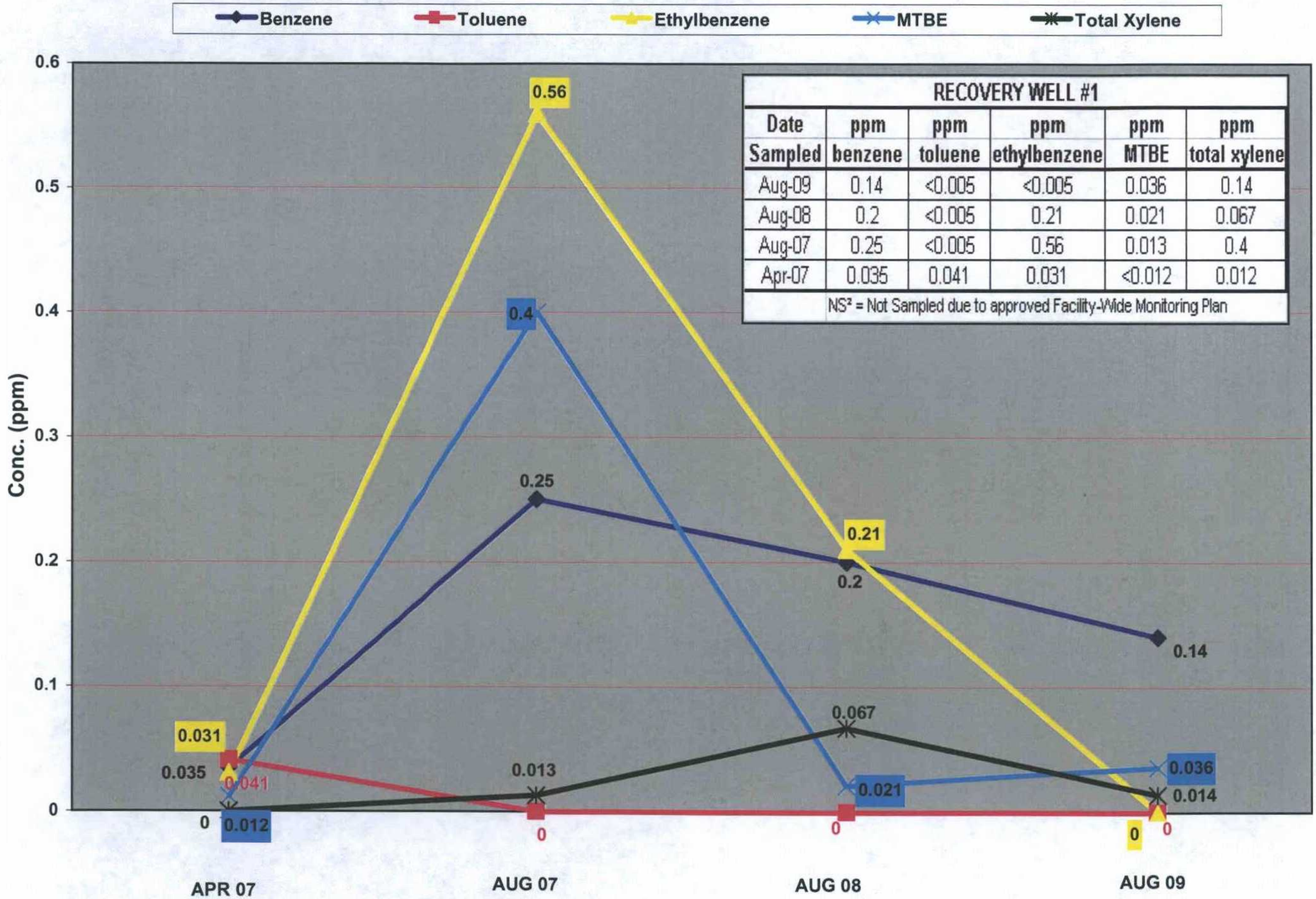
MONITORING WELL #30					
DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	9.5	8	6.3	<0.10	24
Apr-09	5.1	2.7	3.9	<0.10	14
Aug-08	6.7	6.7	4.5	<0.10	18
Apr-08	6	2.4	3.5	<0.15	13

Monitoring Well #31



MONITORING WELL #31					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	3.3	0.024	0.83	<0.02	1.6
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

Recovery Well #1

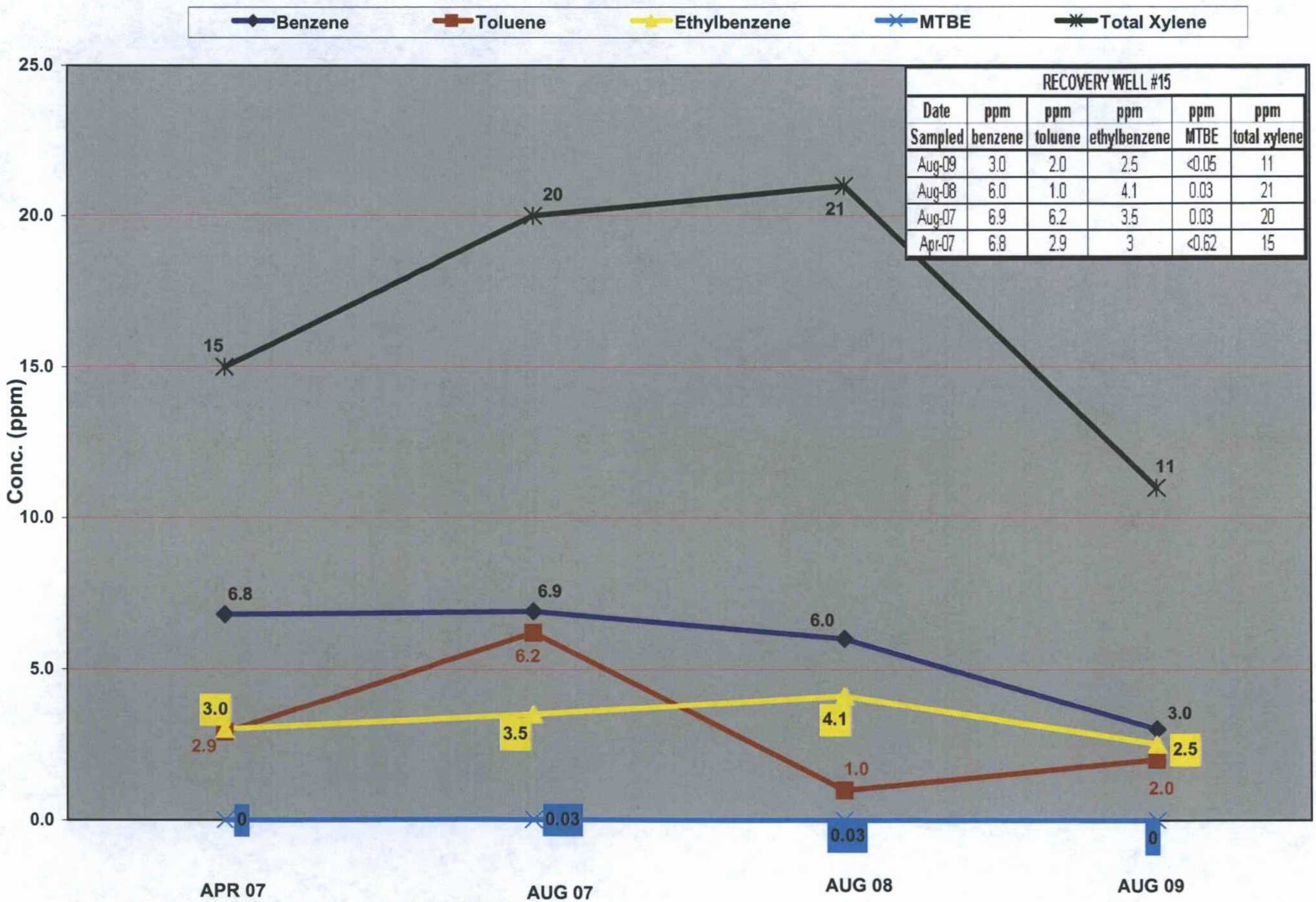


RECOVERY WELL #1					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	0.14	<0.005	<0.005	0.036	0.14
Aug-08	0.2	<0.005	0.21	0.021	0.067
Aug-07	0.25	<0.005	0.56	0.013	0.4
Apr-07	0.035	0.041	0.031	<0.012	0.012

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

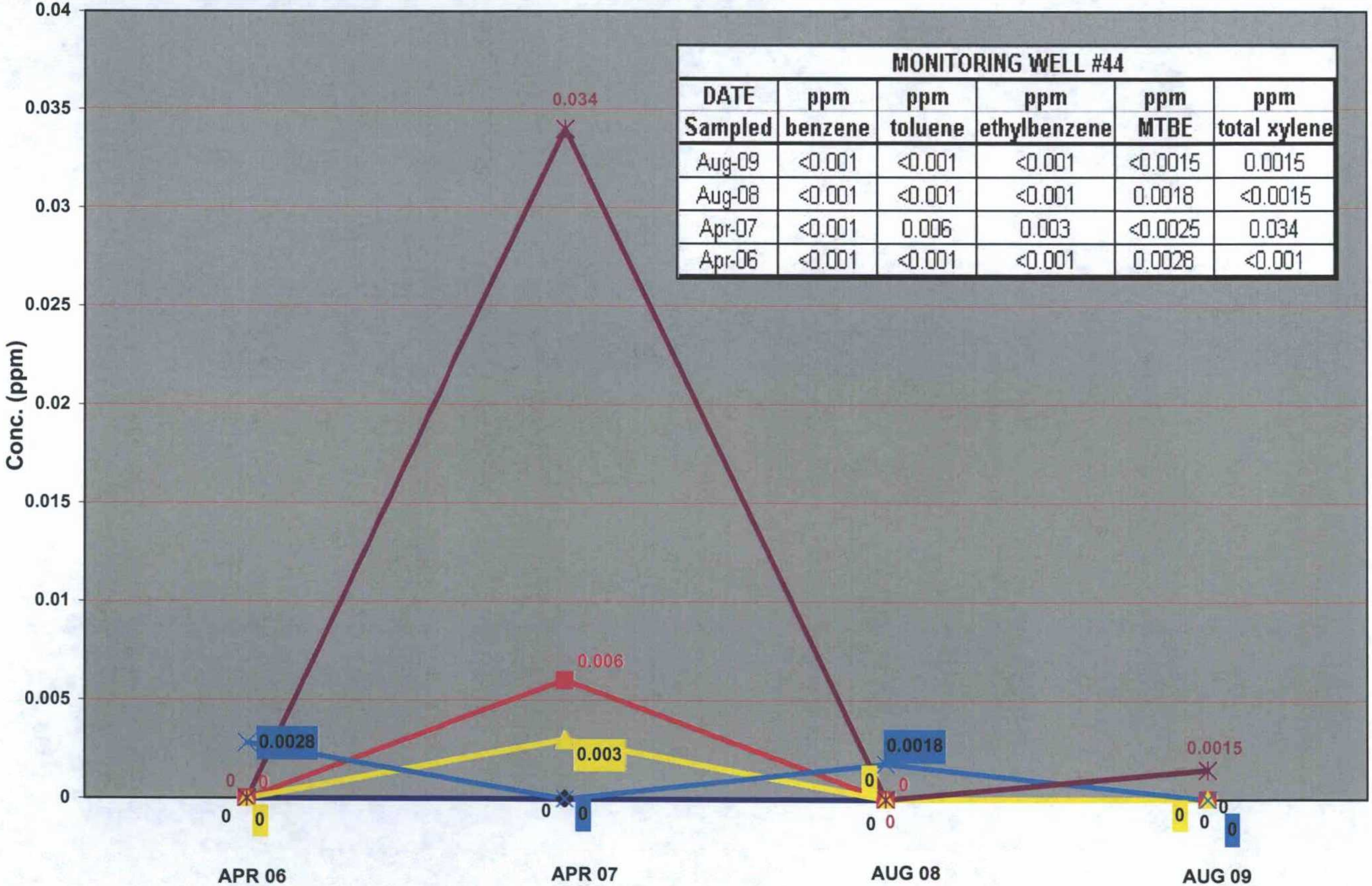
Recovery Well #15

Section 10.0 - Tab 11.0



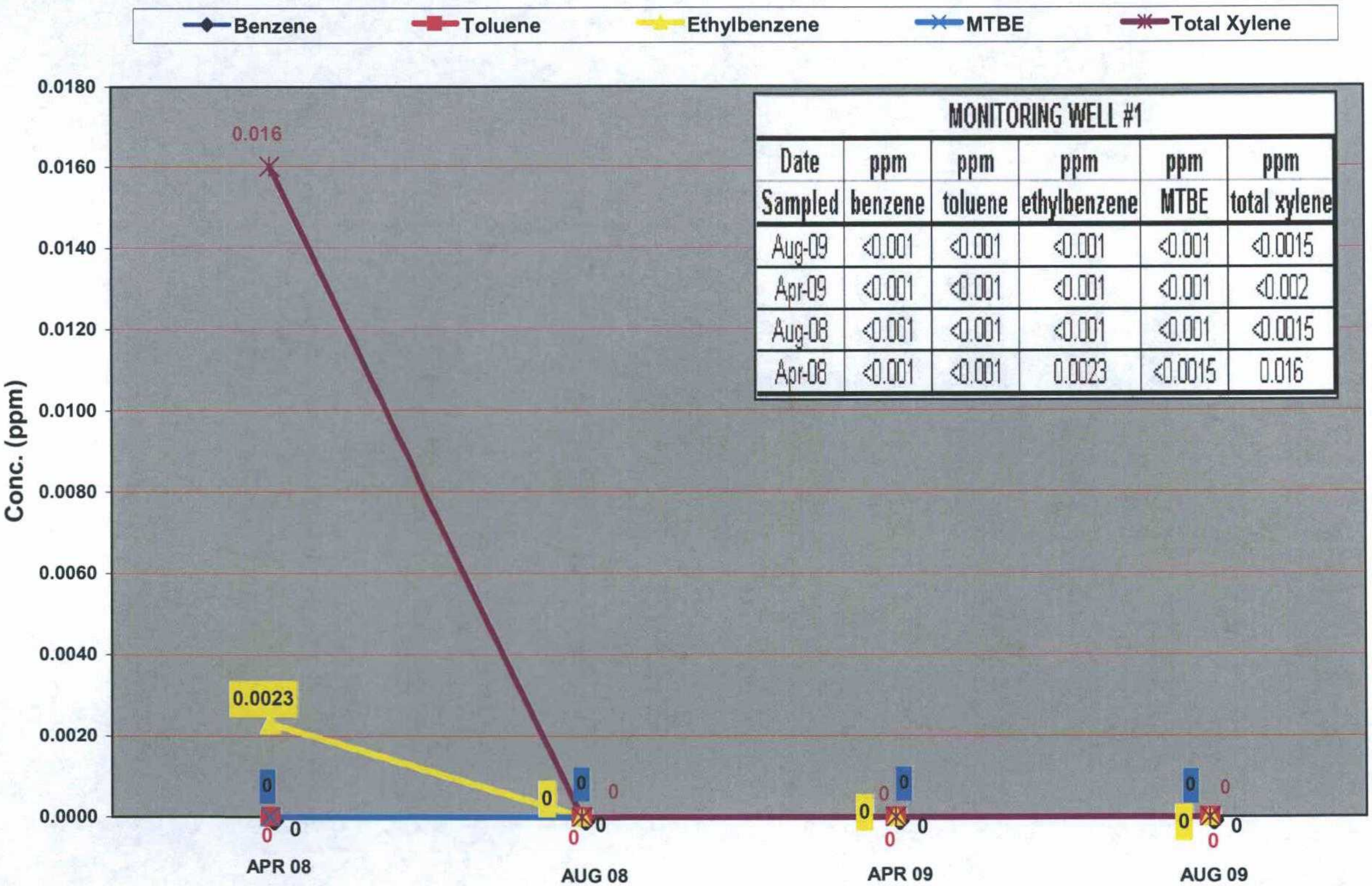
RECOVERY WELL #15

Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	3.0	2.0	2.5	<0.05	11
Aug-08	6.0	1.0	4.1	0.03	21
Aug-07	6.9	6.2	3.5	0.03	20
Apr-07	6.8	2.9	3	<0.62	15



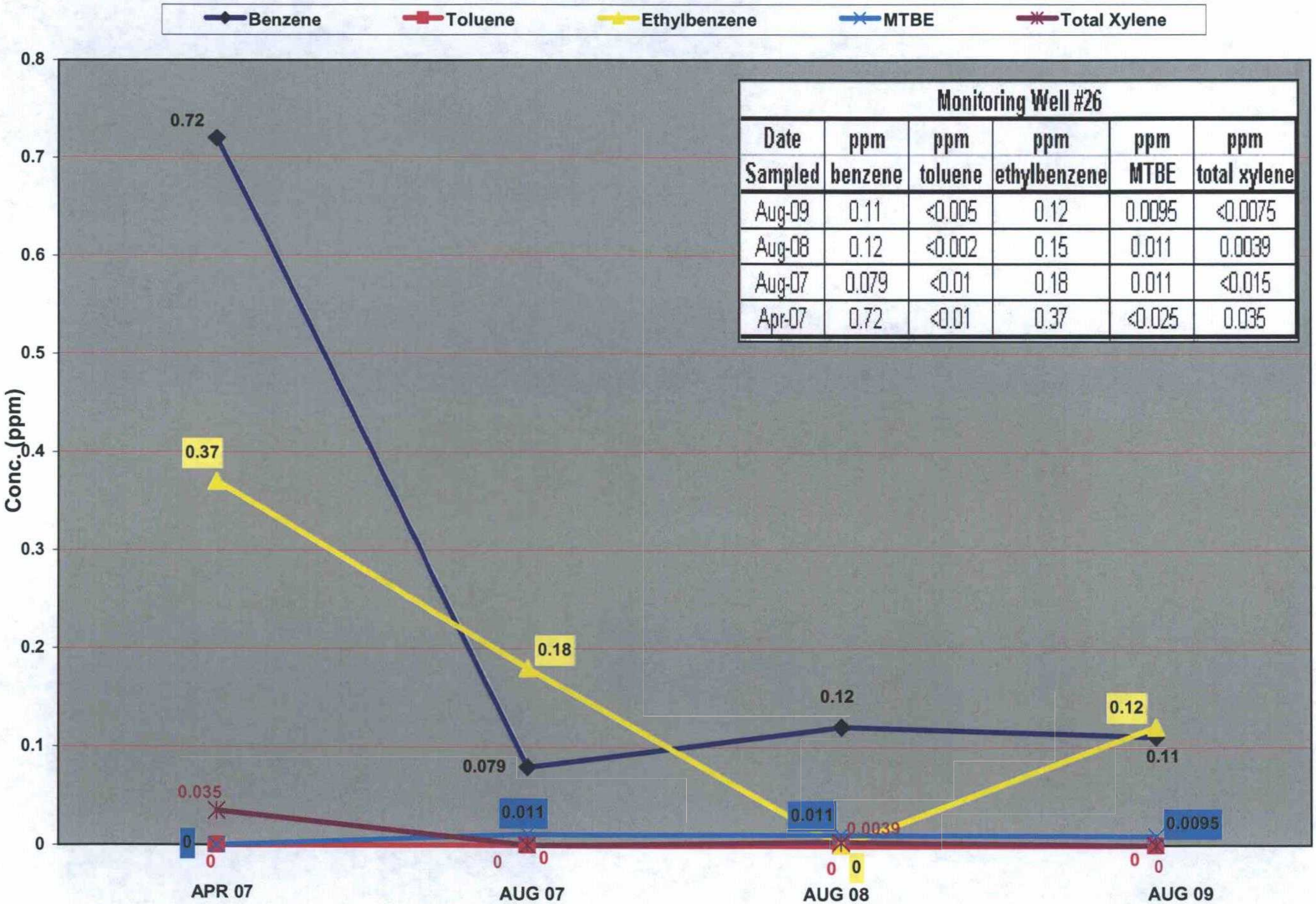
MONITORING WELL #44					
DATE Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.0015	0.0015
Aug-08	<0.001	<0.001	<0.001	0.0018	<0.0015
Apr-07	<0.001	0.006	0.003	<0.0025	0.034
Apr-06	<0.001	<0.001	<0.001	0.0028	<0.001

Monitoring Well #1



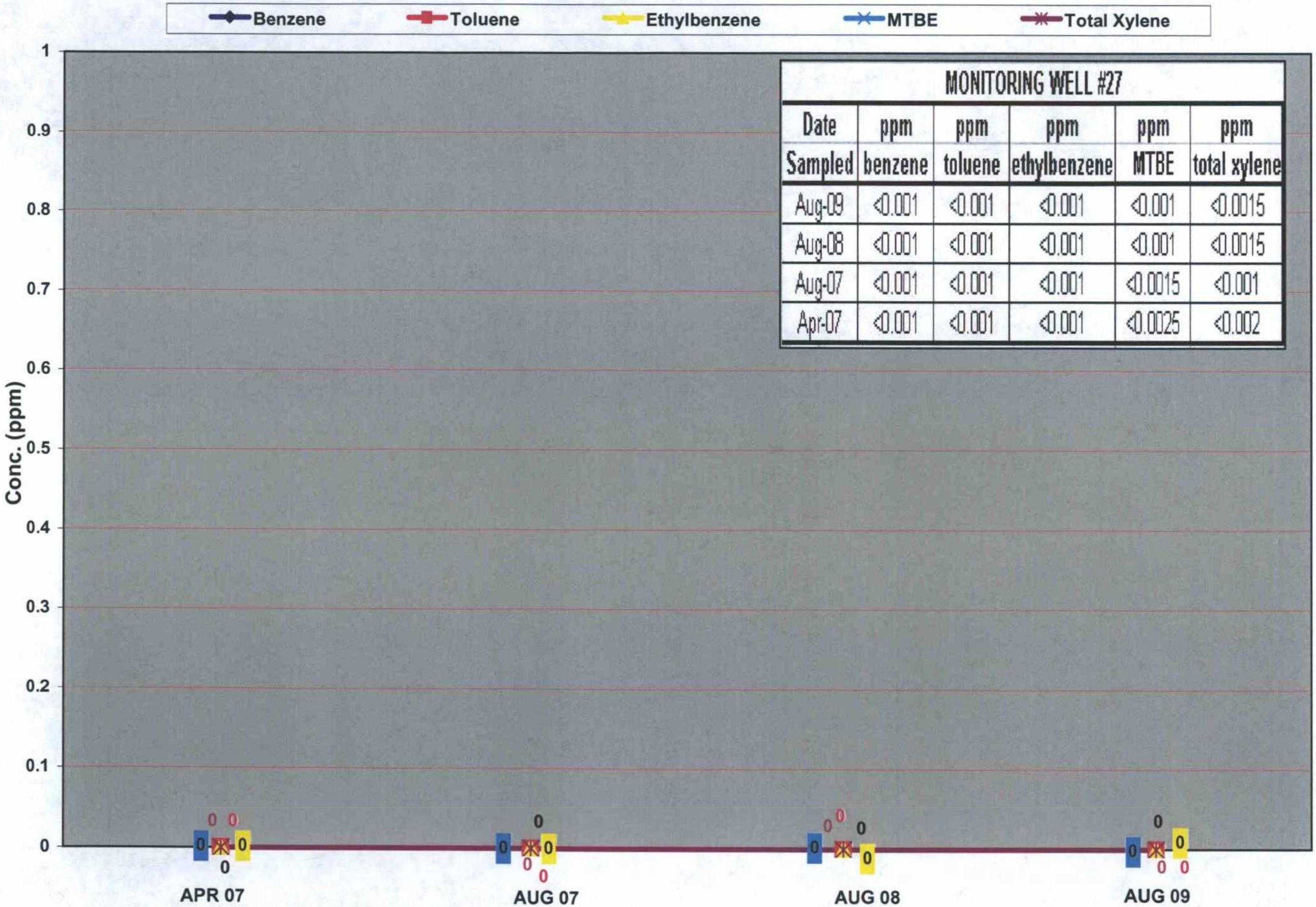
MONITORING WELL #1					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.001	<0.0015
Apr-09	<0.001	<0.001	<0.001	<0.001	<0.002
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Apr-08	<0.001	<0.001	0.0023	<0.0015	0.016

Monitoring Well #26



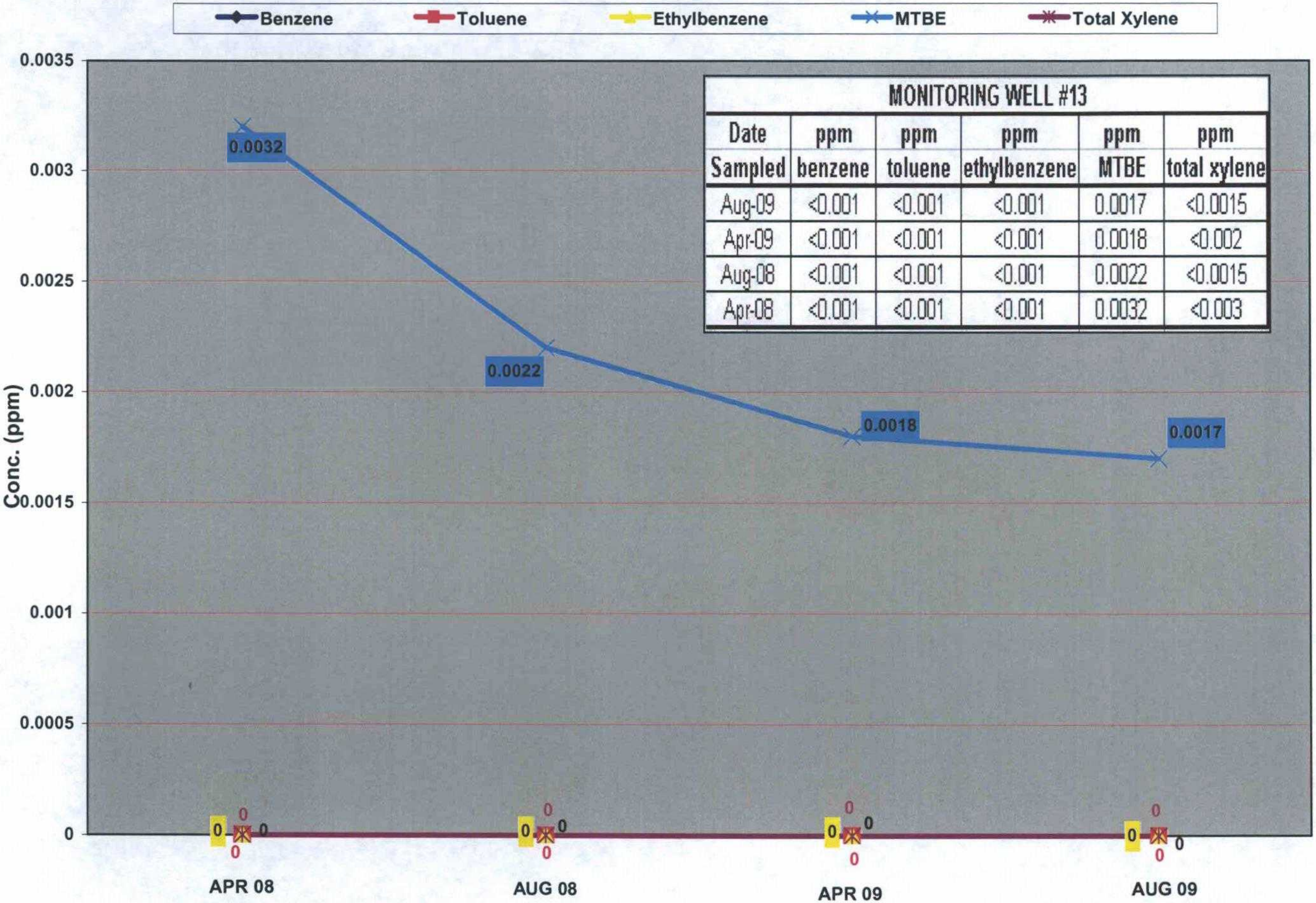
Monitoring Well #26					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	0.11	<0.005	0.12	0.0095	<0.0075
Aug-08	0.12	<0.002	0.15	0.011	0.0039
Aug-07	0.079	<0.01	0.18	0.011	<0.015
Apr-07	0.72	<0.01	0.37	<0.025	0.035

Monitoring Well #27



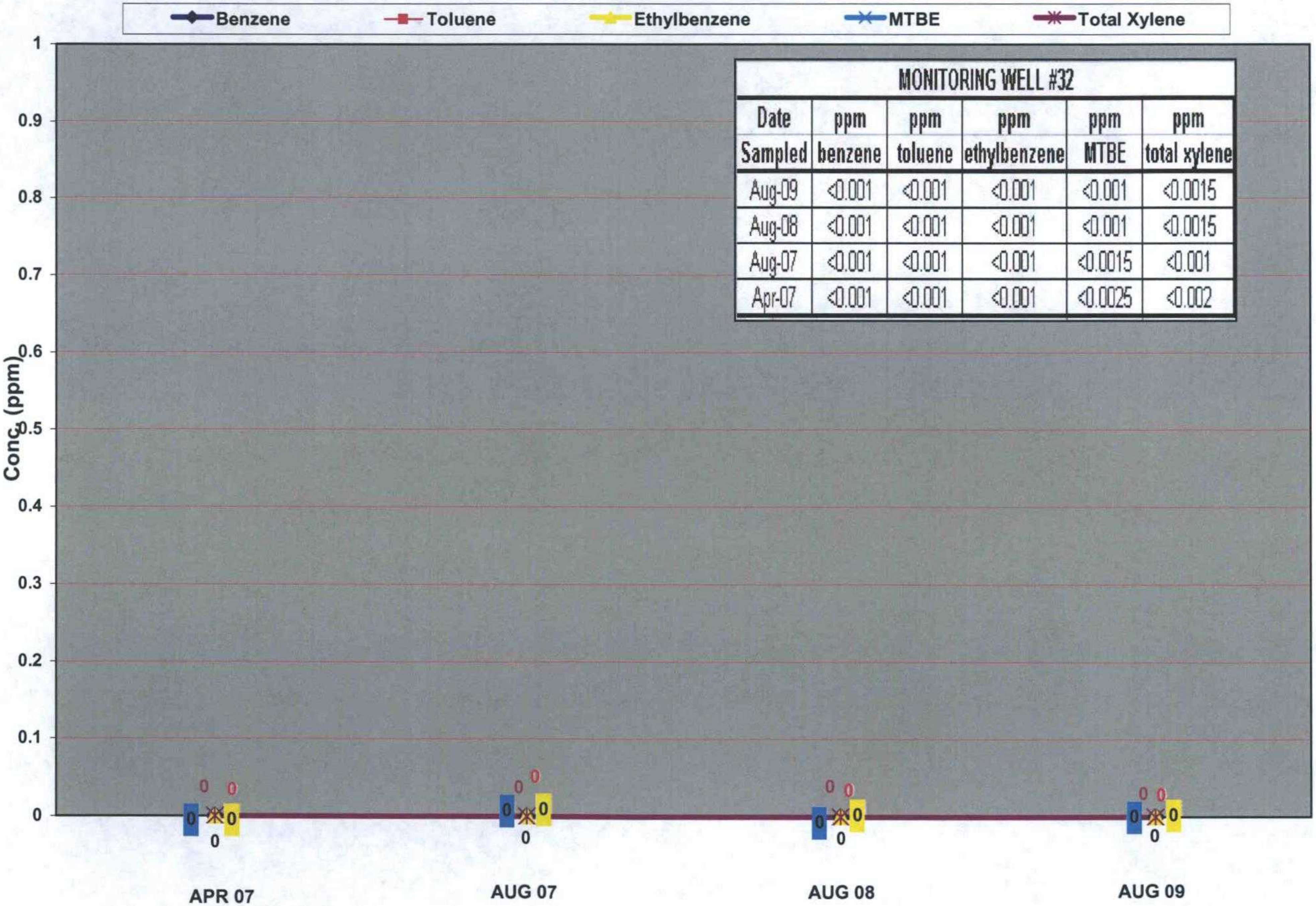
MONITORING WELL #27					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.001	<0.0015
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001
Apr-07	<0.001	<0.001	<0.001	<0.0025	<0.002

Monitoring Well #13



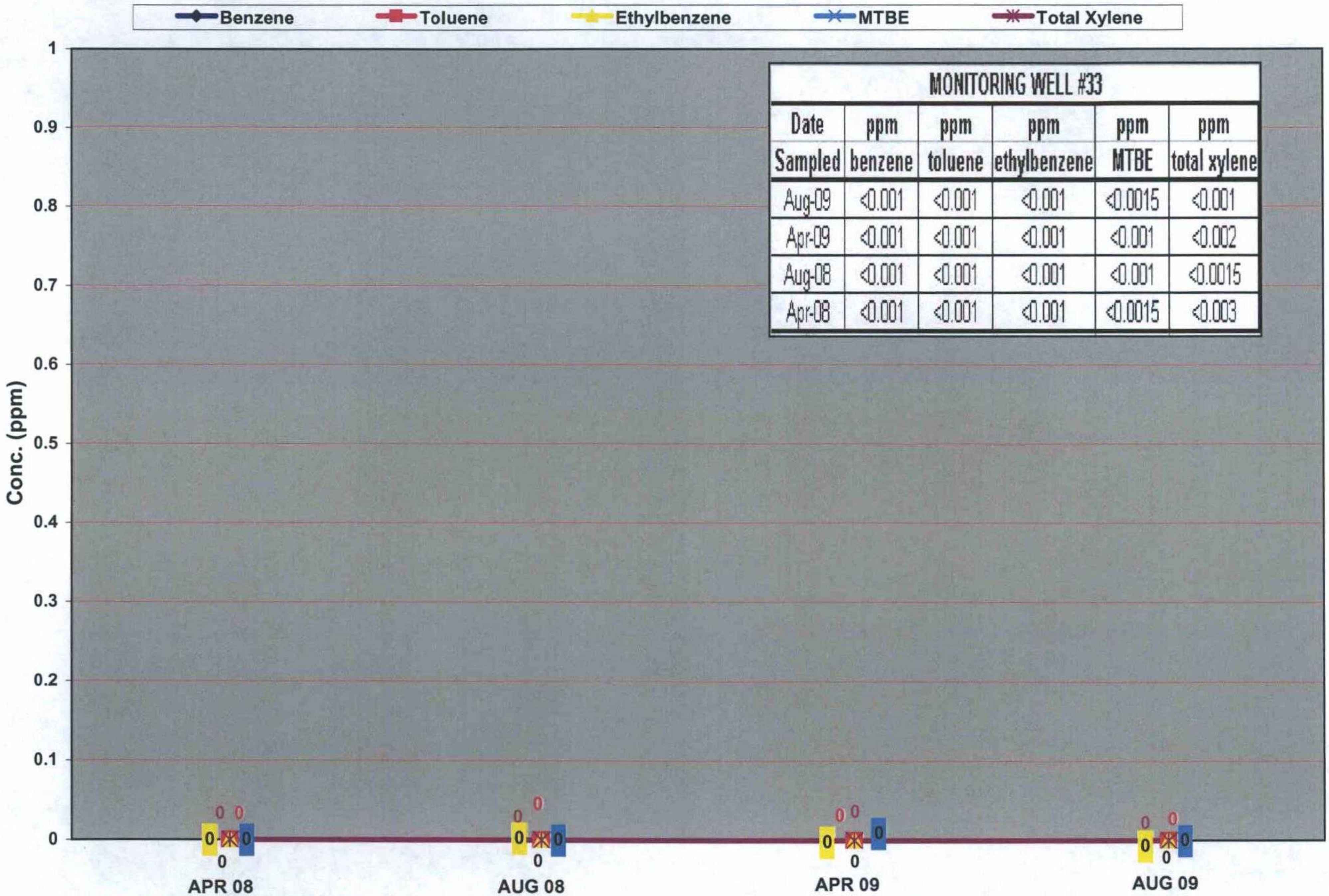
MONITORING WELL #13					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	0.0017	<0.0015
Apr-09	<0.001	<0.001	<0.001	0.0018	<0.002
Aug-08	<0.001	<0.001	<0.001	0.0022	<0.0015
Apr-08	<0.001	<0.001	<0.001	0.0032	<0.003

Monitoring Well #32



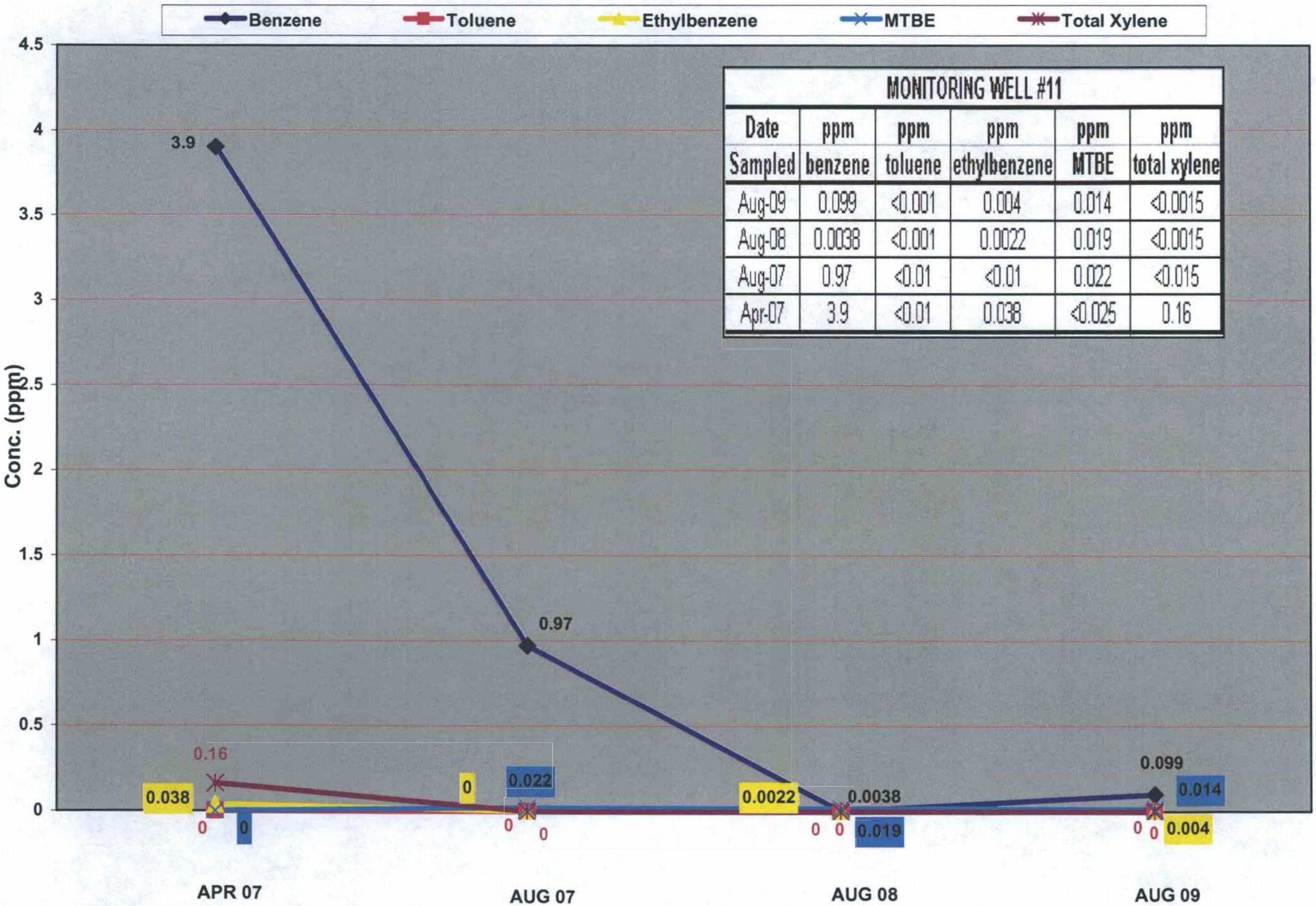
MONITORING WELL #32					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.001	<0.0015
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Aug-07	<0.001	<0.001	<0.001	<0.0015	<0.001
Apr-07	<0.001	<0.001	<0.001	<0.0025	<0.002

Monitoring Well #33



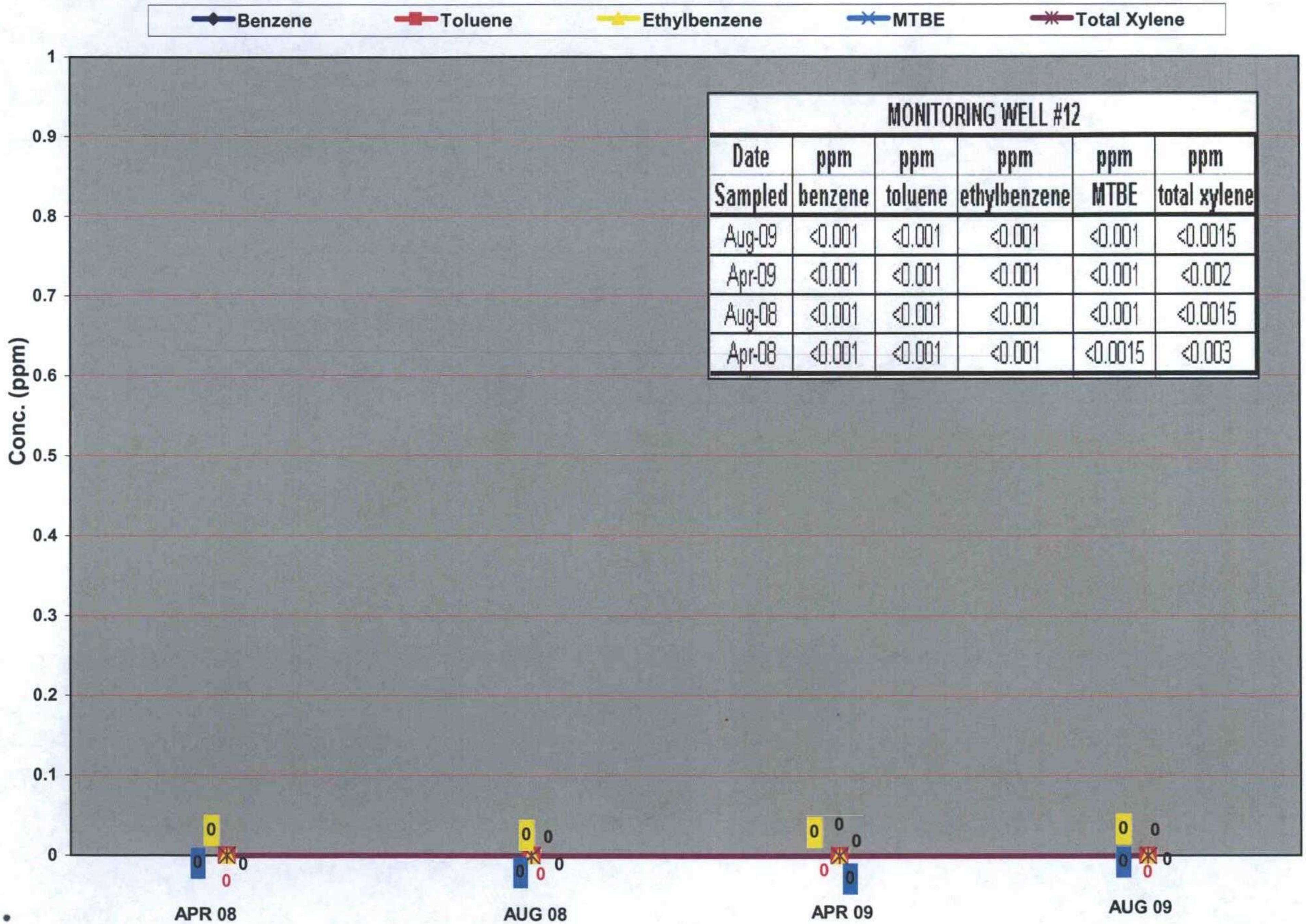
MONITORING WELL #33					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001
Apr-09	<0.001	<0.001	<0.001	<0.001	<0.002
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Apr-08	<0.001	<0.001	<0.001	<0.0015	<0.003

Monitoring Well #11



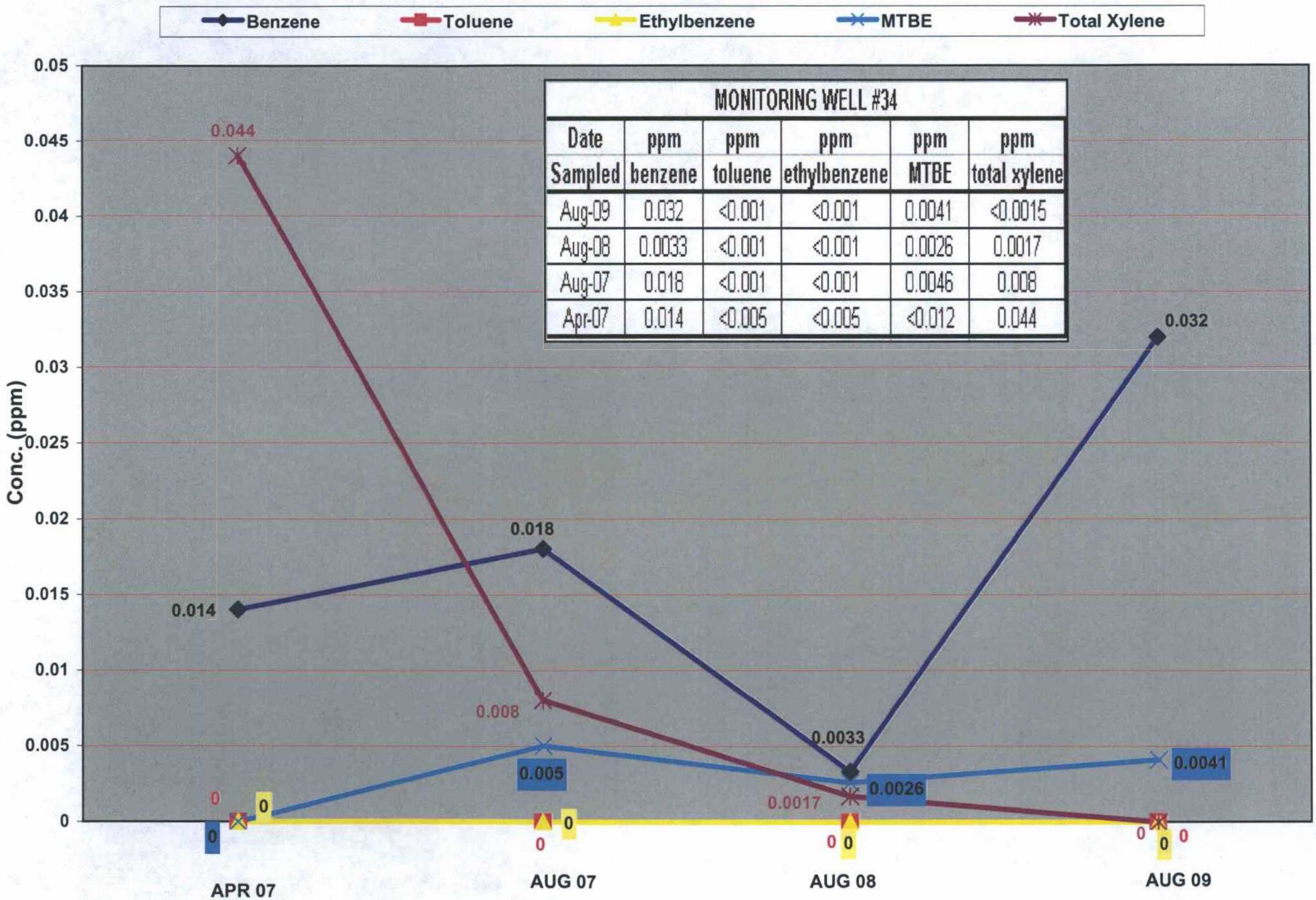
MONITORING WELL #11					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	0.099	<0.001	0.004	0.014	<0.0015
Aug-08	0.0038	<0.001	0.0022	0.019	<0.0015
Aug-07	0.97	<0.01	<0.01	0.022	<0.015
Apr-07	3.9	<0.01	0.038	<0.025	0.16

Monitoring Well #12



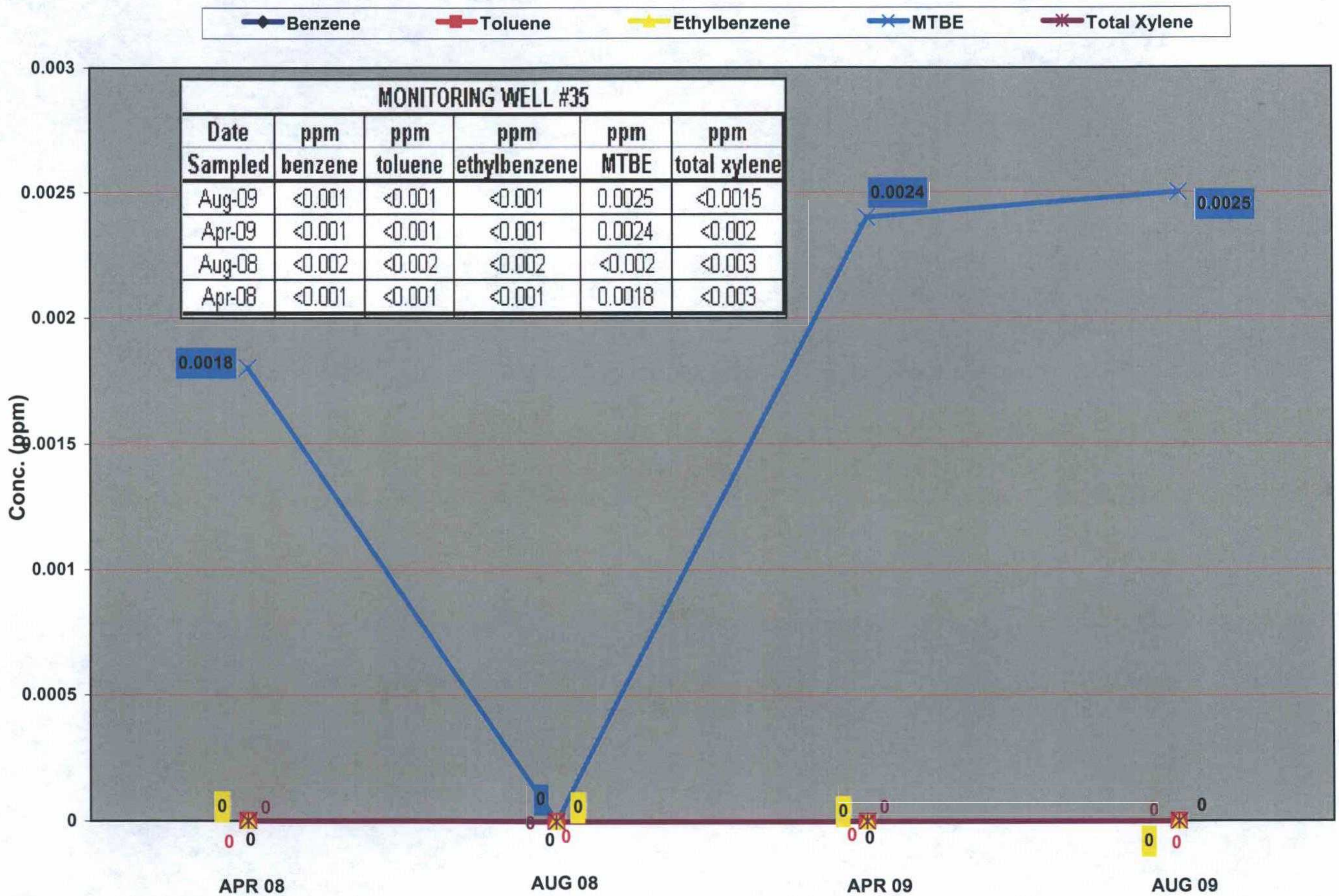
MONITORING WELL #12					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.001	<0.0015
Apr-09	<0.001	<0.001	<0.001	<0.001	<0.002
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Apr-08	<0.001	<0.001	<0.001	<0.0015	<0.003

Monitoring Well #34



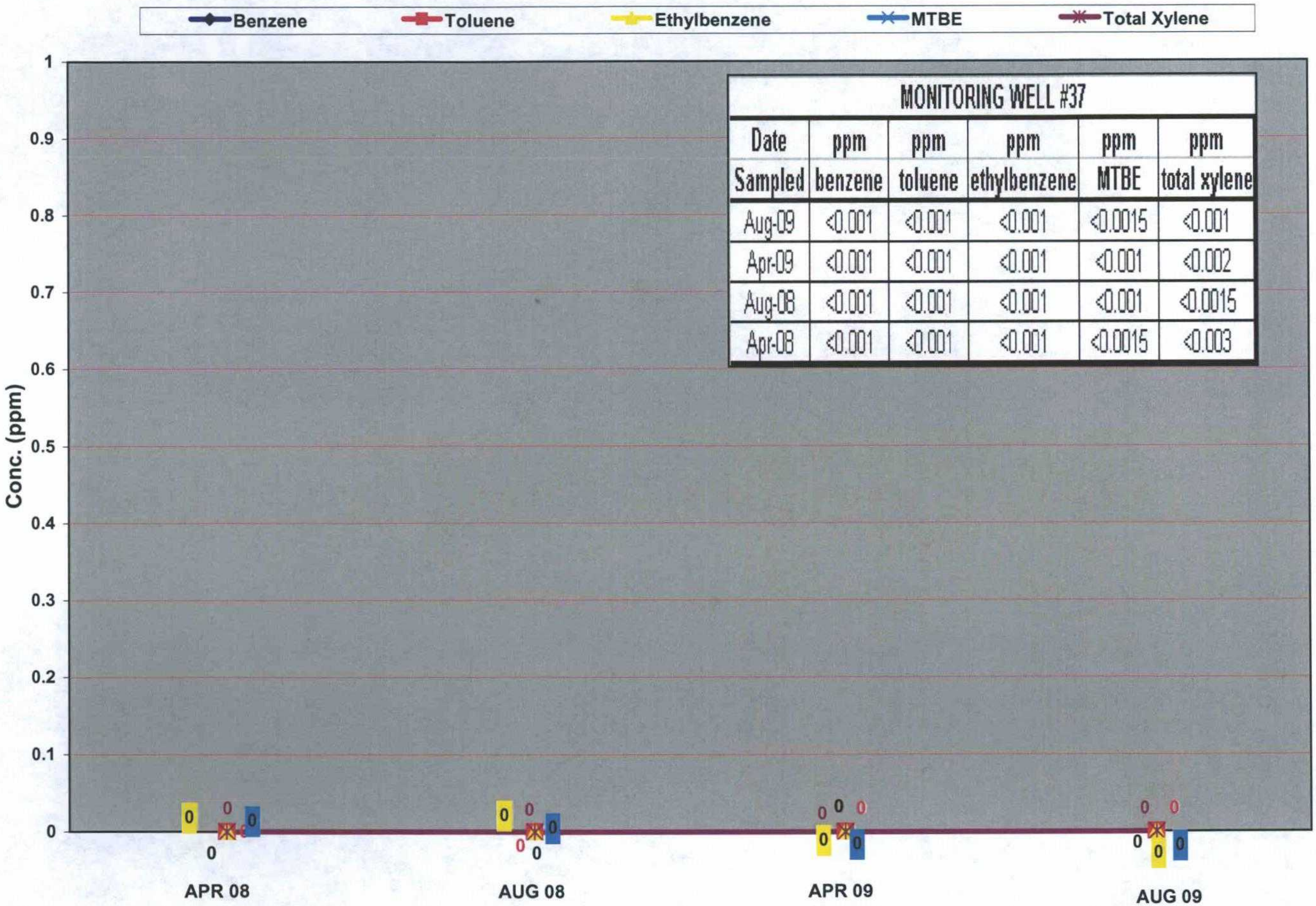
MONITORING WELL #34					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	0.032	<0.001	<0.001	0.0041	<0.0015
Aug-08	0.0033	<0.001	<0.001	0.0026	0.0017
Aug-07	0.018	<0.001	<0.001	0.0046	0.008
Apr-07	0.014	<0.005	<0.005	<0.012	0.044

Monitoring Well #35



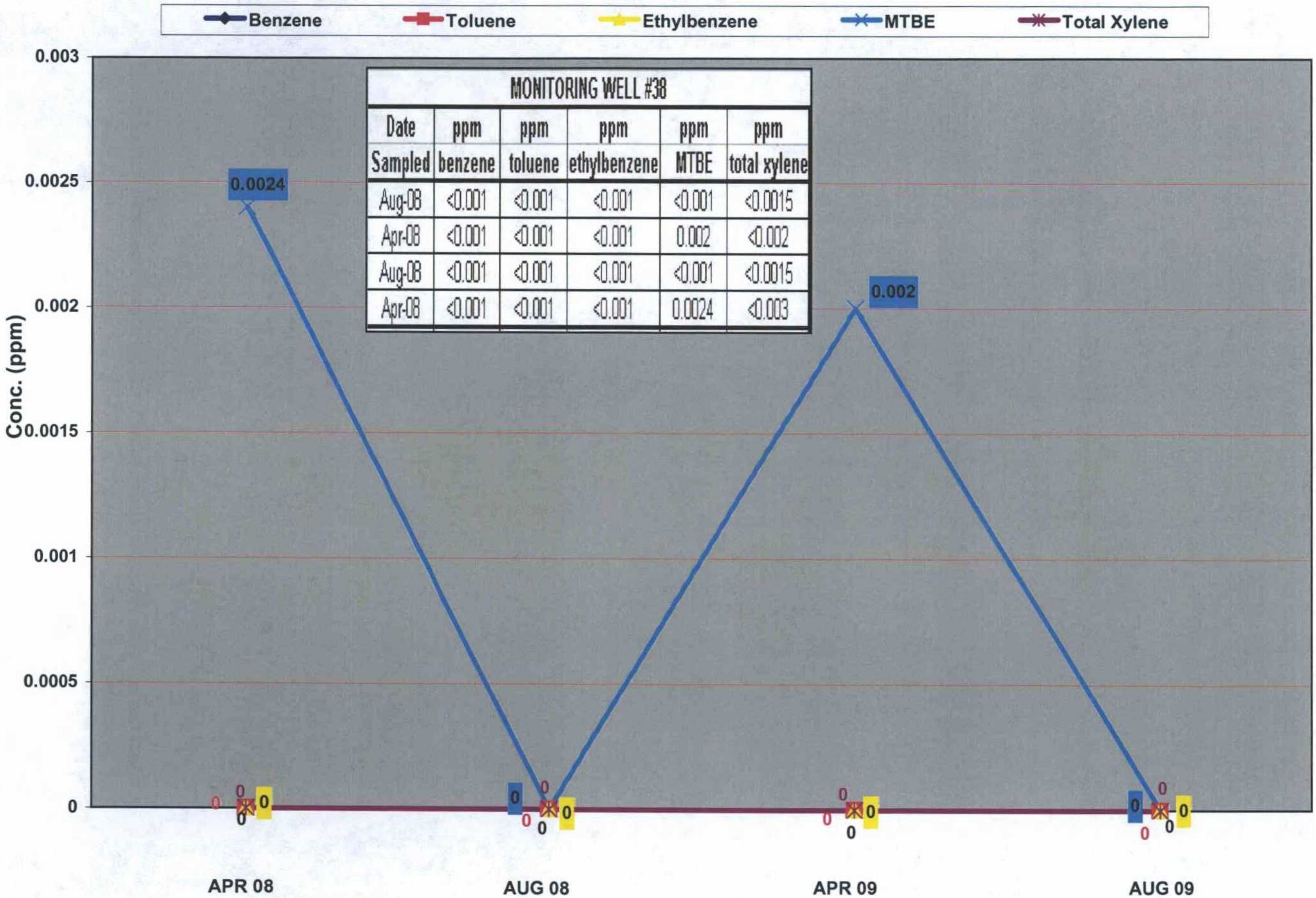
MONITORING WELL #35					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	0.0025	<0.0015
Apr-09	<0.001	<0.001	<0.001	0.0024	<0.002
Aug-08	<0.002	<0.002	<0.002	<0.002	<0.003
Apr-08	<0.001	<0.001	<0.001	0.0018	<0.003

Monitoring Well #37



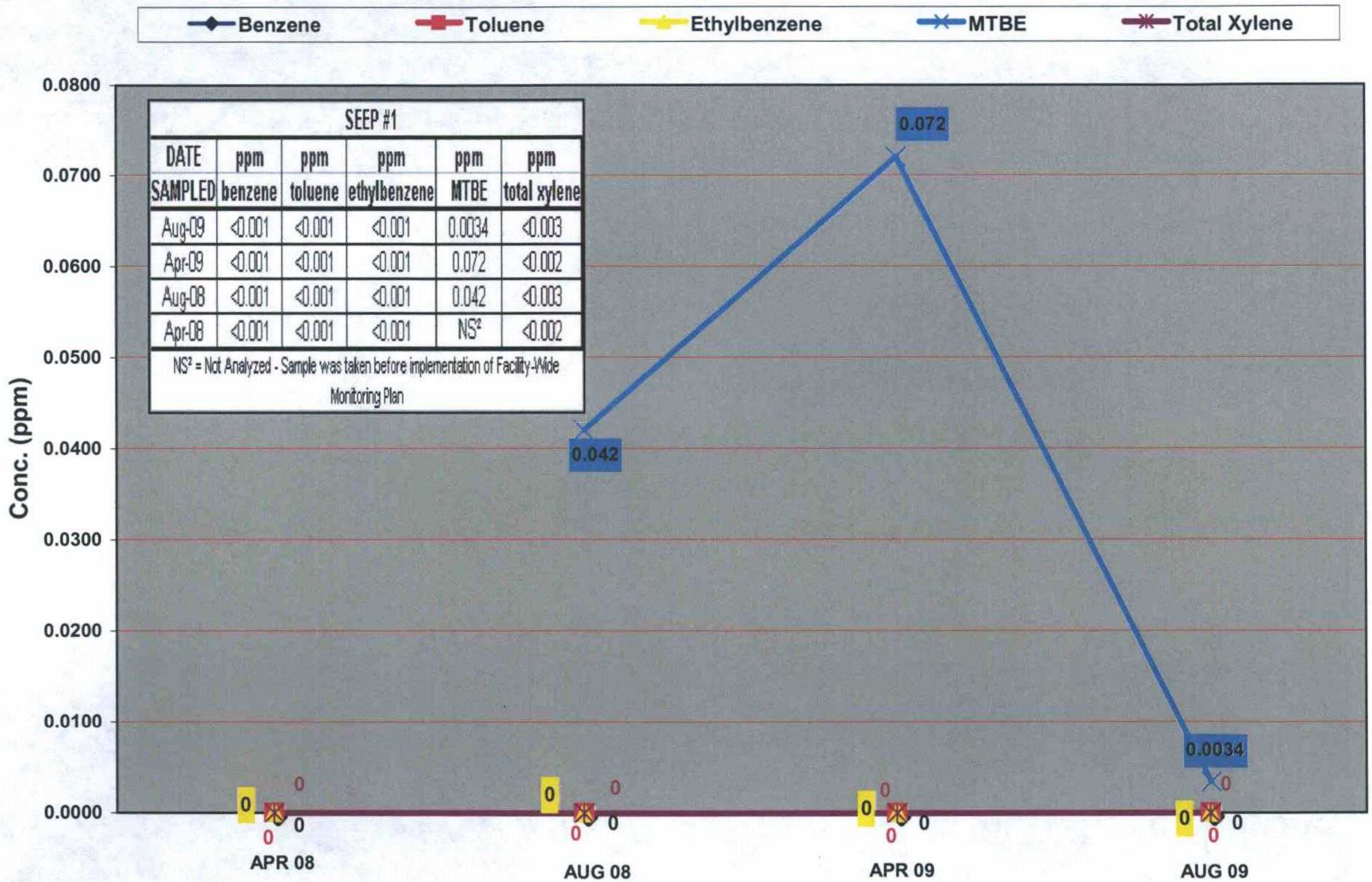
MONITORING WELL #37					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001
Apr-09	<0.001	<0.001	<0.001	<0.001	<0.002
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Apr-08	<0.001	<0.001	<0.001	<0.0015	<0.003

Monitoring Well #38



MONITORING WELL #38					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Apr-08	<0.001	<0.001	<0.001	0.002	<0.002
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.0015
Apr-08	<0.001	<0.001	<0.001	0.0024	<0.003

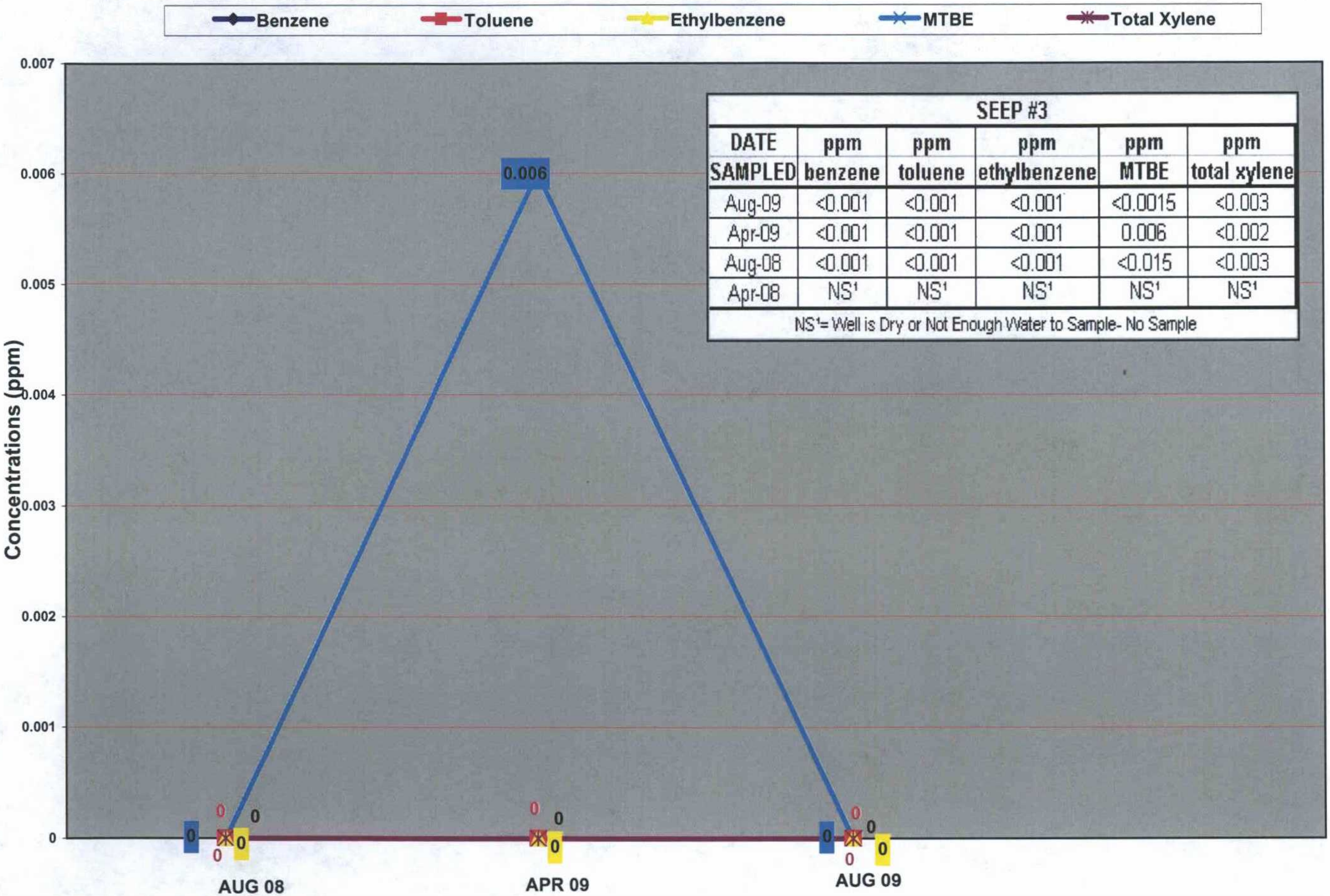
Seep #1



SEEP #1					
DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	0.0034	<0.003
Apr-09	<0.001	<0.001	<0.001	0.072	<0.002
Aug-08	<0.001	<0.001	<0.001	0.042	<0.003
Apr-08	<0.001	<0.001	<0.001	NS²	<0.002

NS² = Not Analyzed - Sample was taken before implementation of Facility-Wide Monitoring Plan

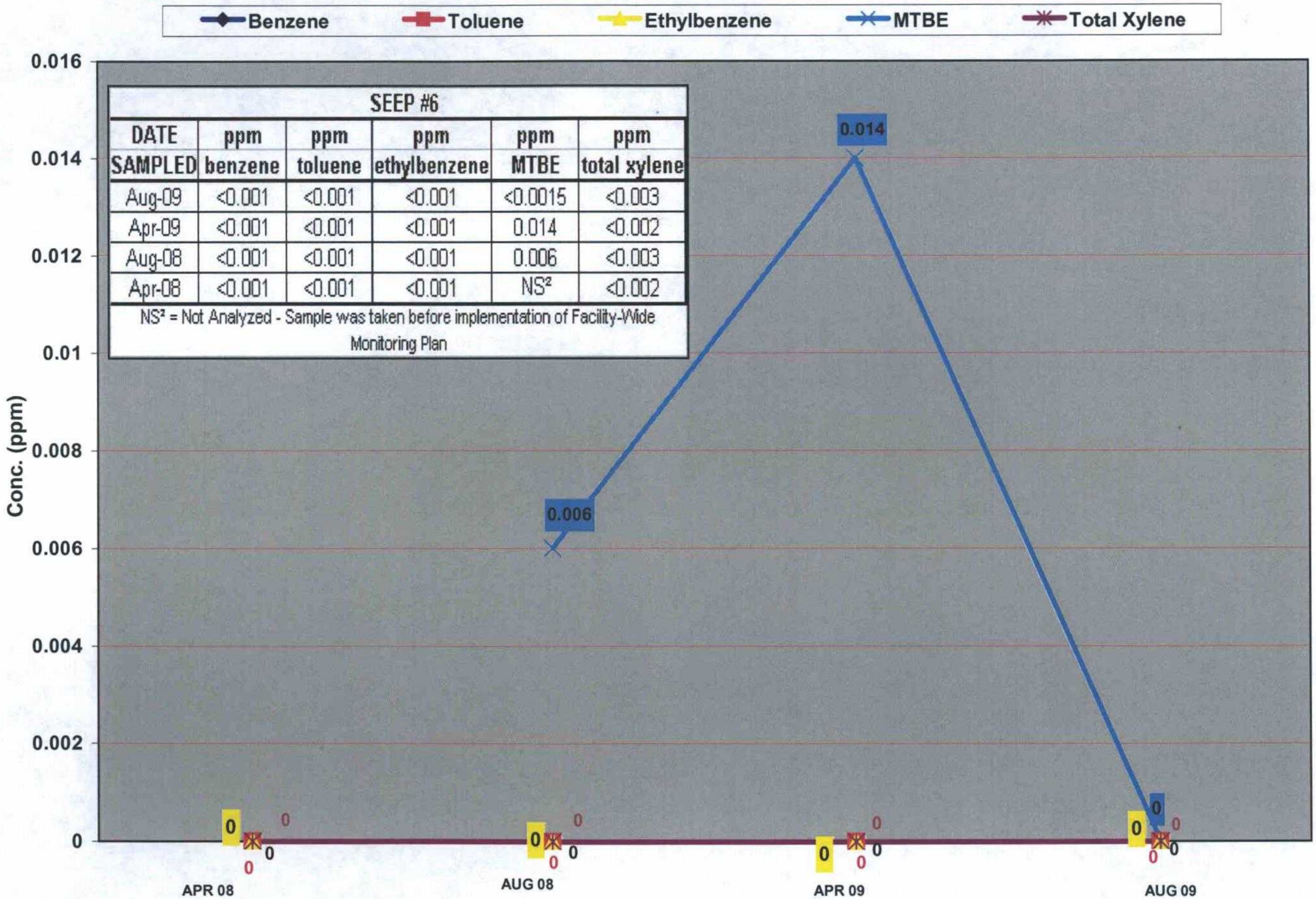
Seep #3



SEEP #3					
DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.003
Apr-09	<0.001	<0.001	<0.001	0.006	<0.002
Aug-08	<0.001	<0.001	<0.001	<0.015	<0.003
Apr-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

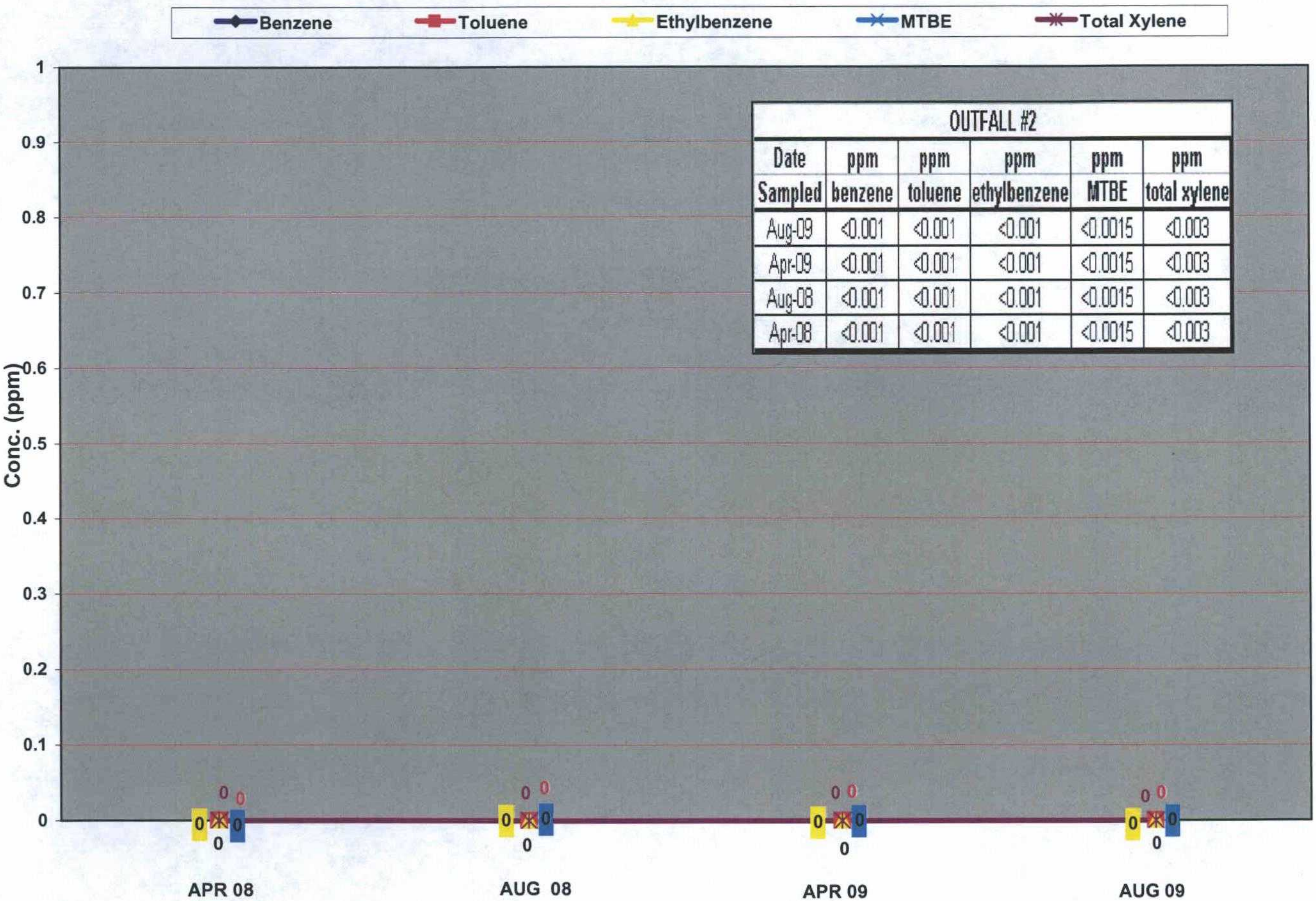
Seep #6



SEEP #6					
DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.003
Apr-09	<0.001	<0.001	<0.001	0.014	<0.002
Aug-08	<0.001	<0.001	<0.001	0.006	<0.003
Apr-08	<0.001	<0.001	<0.001	NS²	<0.002

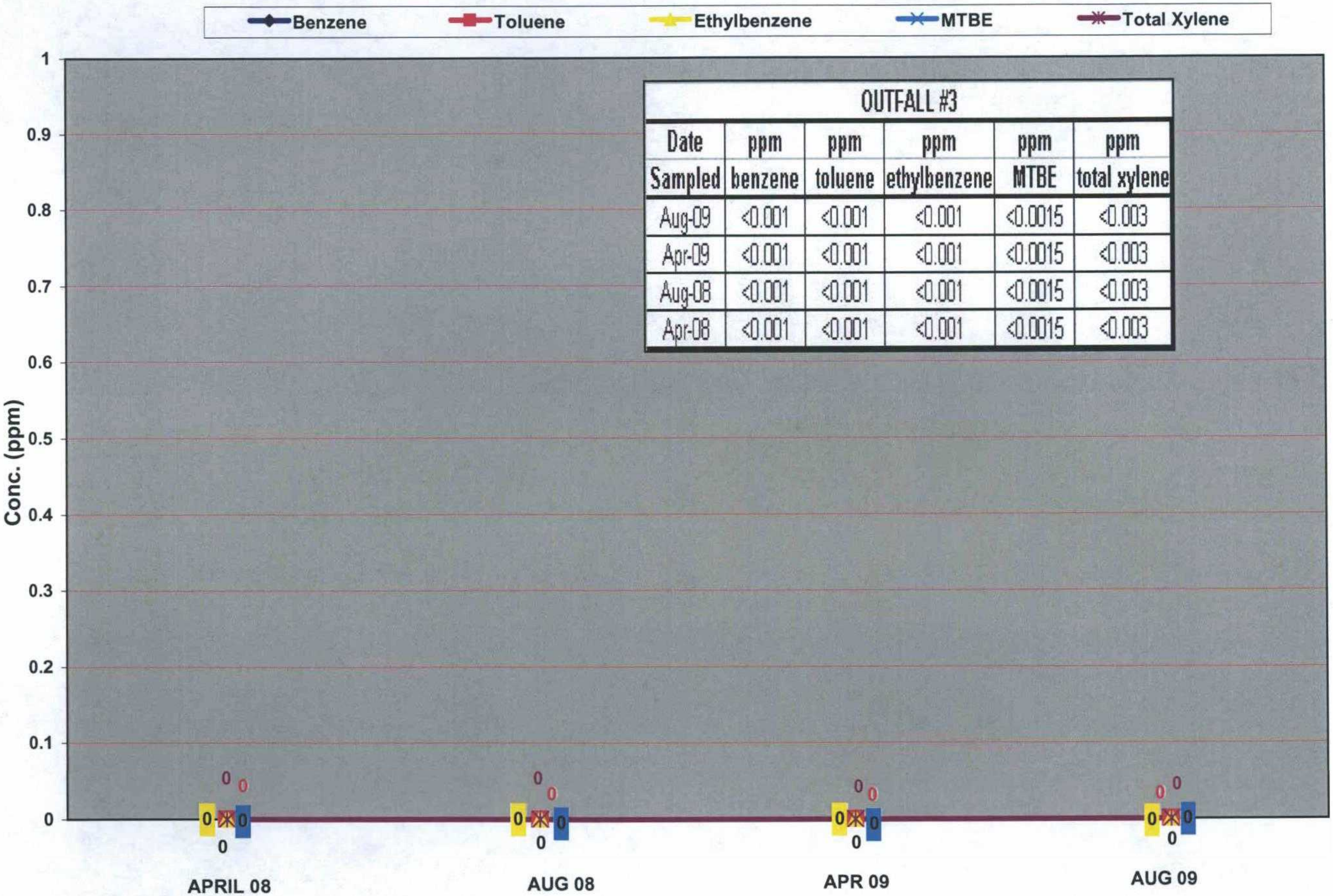
NS² = Not Analyzed - Sample was taken before implementation of Facility-Wide Monitoring Plan

OUTFALL #2



OUTFALL #2					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.003
Apr-09	<0.001	<0.001	<0.001	<0.0015	<0.003
Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.003
Apr-08	<0.001	<0.001	<0.001	<0.0015	<0.003

OUTFALL #3



OUTFALL #3					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.003
Apr-09	<0.001	<0.001	<0.001	<0.0015	<0.003
Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.003
Apr-08	<0.001	<0.001	<0.001	<0.0015	<0.003

Section 11.0 Field Methods

11.0 Field Methods

Groundwater Elevation

All facility monitoring wells, recovery wells, observation and collection wells were measured for groundwater elevation in February, April, August, and November. Refinery personnel followed the guidelines of the *Facility-Wide Groundwater Monitoring Plan December 2007 (Revised May 2008)* to collect groundwater levels and SPH thickness measurements. 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 or more days later).

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

Prior to purging, a YSI 550A Dissolved Oxygen Probe is used to determine dissolved oxygen (DO) levels. Water quality parameters are measured using an Ultrameter 6P by the Myron L Company. Electrical conductance, oxidation-reduction potential (ORP), Total Dissolved Solids (TDS), pH, and temperature are monitored during purging.

Well Purging Technique

After determining water levels and measuring DO, initial well volumes are calculated. Total purge volume is determined by monitoring electrical conductance, pH, temperature, ORP, and TDS after every two gallons or each well volume, whichever is less, has been purged from the well. The wells were considered satisfactorily purged when the field parameter values did not vary by more than 10 percent for at least three measurements.

Well 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
- YSI 550A Dissolved Oxygen Probe
- 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, YSI 550A Dissolved Oxygen Probe, 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

Calibration of the YSI 550A Dissolved Oxygen Instrument occurs at the beginning of each day of sampling. The probe is powered on and allowed to stabilize, which usually takes 15 minutes. Enter the calibration menu. The LCD will prompt you to enter the local altitude in hundreds of feet. When the proper altitude appears on the LCD, press the **ENTER** key.

The LCD will then prompt you to enter the salinity of the water you are about to analyze. After entering the correct salinity, the instrument will return to normal operation.

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 12.0 Waste Disposition

12.0

Waste Disposition 2009

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
2/4/2009	CH247415	002224224FLE	Main Column Bottoms Sludge K-170, D008, D009	2	DM	900 P	Clean Harbors El Dorado LLC 309 American Circle El Dorado, Arkansas 71730	Incineration	Yes
2/4/2009	CH315168	002224225FLE	Burner Rack Sludge (Non-Hazardous)	4	DM	2500 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfill	Yes
2/4/2009	CH296865	002224226FLE	Process Sewer Spill Clean-up Hazardous Waste Solid D-018, F-037	1	DM	500 P	Clean Harbors 2247 South Highway 71 Kimball, NE 69145	Incineration	Yes
2/4/2009	CH296877	002224226FLE	API Sludge (Hazardous Waste Solid) K-051, D-018	2	DM	900 P	Clean Harbors 2247 South Highway 71 Kimball, NE 69145	Incineration	Yes
2/4/2009	CH331091	002224227FLE	Crude Oil and Soil from Clean Up (Tk #31) (Non-Hazardous)	3	DM	1,500	Clean Harbors Arizona, LLC 1340 West Lincoln Street Phoenix, Arizona 85007	Landfill	Yes
5/6/2009	CH 106148	002659448 FLE	Exchanger Bundle Sludge (K-050)	3	DM	900 P	Clean Harbors Deer Park LP 2027 Independence Parkway South La Porte, TX 77571	Incineration	Yes
5/6/2009	CH 247415	002659448 FLE	Main Column Bottoms Sludge K-170, D008, D009	1	DM	550 P	Clean Harbors Deer Park LP 2027 Independence Parkway South La Porte, TX 77571	Incineration	Yes
5/6/2009	CH 315430	002296624FLE	Vacuum Truck Sludge (F037)	13	DM	7150 P	Clean Harbors Deer Park LP 2027 Independence Parkway South La Porte, TX 77571	Incineration	Yes
5/6/2009	CH 364761	002659448 FLE	Benzene Stripper Sludge (F038)	12	DM	6800 P	Clean Harbors Deer Park LP 2027 Independence Parkway South La Porte, TX 77571	Incineration	Yes

BA = Burlap,cloth,paper,or plastic bags
CF = Fiber or plastic boxes, cartons, cases
CM = Metal boxes, cartons, cases (including roll-offs)
CW = Wooden boxes, cartons, cases
CY = Cylinders

DF = Fiberboard or plastic drums, barrels, kegs
DM = Metal drums, barrels, kegs
DT = Dump truck
DW = Wooden drums, barrels, kegs
HG = Hopper or gondola cars

TC = Tanker cars
TP = Portable tanks
TT = Cargo tanks (tank trucks)

Waste Disposition 2009

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
5/6/2009	CH 355517	002296624FLE	Desalter Sludge (D008, D009, D018)	10	DM	5500 P	Clean Harbors Deer Park LP 2027 Independence Parkway South La Porte, TX 77571	Incineration	Yes
6/25/2009	CH 374834B	002648087 FLE	Vacuum Truck Sludge (F037, D009)	1	CM (Vac Box)	20,980 P	Clean Harbors Env. Sevices, Inc 2247 South Highway 71 Kimball, NE 69145	Incineration	Yes
6/29/2009		004162526 JJK	Spent Hydrotreating Catalyst (DHT) (K-171)	8	CM	37,820 P	Eurecat U.S., Inc. 13100 Bay Park Rd. Pasadena, Texas 77507	Recycled	Yes
7/14/2009	CH309573B	002637882 FLE	Soil Contaminated with Liquid from the Poly Unit Process Sewer (D018) (F037)	1	TT	46,400 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Incineration	Yes
9/1/2009	CH106148	002978183 FLE	Exchanger Bundle Sludge/Debris - Tk #28	1	DM	500 P	Clean Harbors Env. Sevices, Inc 2247 South Highway 71 Kimball, NE 69145	Incineration	Yes
9/1/2009	CH247415	002978183 FLE	Main Column Bottoms Sludge K-170, D008, D009	2	DM	1,000 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Incineration	Yes
9/1/2009	CH255646	002978183 FLE	Soil Contaminated with Red Dye/Debris - Non RCRA (Clean up at Terminals)	2	DM	1,000 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Incineration	Yes
12/1/2009	CH106150	002918766FLE	Crude Oil Tank Bottoms (Tk #28 Clean Out) K-169	2	DM	800 P	Clean Harbors Env. Sevices, Inc 2247 South Highway 71 Kimball, NE 69145	Incineration	Yes
12/1/2009	CH106150	002918766FLE	Main Column Bottoms Sludge K-170, D008, D009	1	DM	400 P	Clean Harbors Env. Sevices, Inc 2247 South Highway 71 Kimball, NE 69145	Incineration	Yes

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CF = Fiber or plastic boxes, cartons, cases
CM = Metal boxes, cartons, cases (including roll-offs)
CW = Wooden boxes, cartons, cases
CY = Cylinders

DF = Fiberboard or plastic drums, barrels, kegs
DM = Metal drums, barrels, kegs
DT = Dump truck
DW = Wooden drums, barrels, kegs
HG = Hopper or gondola cars

TC = Tanker cars
TP = Portable tanks
TT = Cargo tanks (tank trucks)

Waste Disposition 2009

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
12/1/2009	CH364761	002918766FLE	Benzene Stripper Sludge (F038)	2	DM	1600 P	Clean Harbors Env. Sevices, Inc 2247 South Highway 71 Kimball, NE 69145	Incineration	Yes
12/8/2009	424076-00	002459286FLE	Hazardous Debris (K-169 - PPE from Tk #28 Clean Out)	2	CF	1140 P	U.S Ecology Idaho, Inc. 20400 Lemley Rd Grand Veiw, ID. 83624	Encapsulation	Yes

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CF = Fiber or plastic boxes, cartons, cases
CM = Metal boxes, cartons, cases (including roll-offs)
CW = Wooden boxes, cartons, cases
CY = Cylinders

DF = Fiberboard or plastic drums, barrels, kegs
DM = Metal drums, barrels, kegs
DT = Dump truck
DW = Wooden drums, barrels, kegs
HG = Hopper or gondola cars

TC = Tanker cars
TP = Portable tanks
TT = Cargo tanks (tank trucks)

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12.0 Spent Caustic Waste 2009

Pick-up Date	Profile #	Manifest #	Description	Containers No.	Containers Type	Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
1/21/2009	CH248999B	002322434FLE	Waste Caustic Alkali Liquids D002	1	TT	32,060 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
2/4/2009	CH248999B	002322455FLE	Waste Caustic Alkali Liquids D002	1	TT	36,700 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
2/17/2009	CH248999B	001148588FLE	Waste Caustic Alkali Liquids D002	1	TT	37,480 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
2/24/2009	CH248999B	001148698FLE	Waste Caustic Alkali Liquids D002	1	TT	37,440 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
4/1/2009	CH248999B	002659117FLE	Waste Caustic Alkali Liquids D002	1	TT	40,680 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
4/9/2009	CH248999B	002659179FLE	Waste Caustic Alkali Liquids D002	1	TT	42,400 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
4/23/2009	CH248999B	002698069FLE	Waste Caustic Alkali Liquids D002	1	TT	36,740 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
5/7/2009	CH248999B	002659449FLE	Waste Caustic Alkali Liquids D002	1	TT	40,220 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
5/12/2009	CH248999B	002645017 FLE	Waste Caustic Alkali Liquids D002	1	TT	40,030 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes

TT = Cargo tanks (tank trucks)

12.0 Spent Caustic Waste 2009

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
5/27/2009	CH248999B	004162522 JJK	Waste Caustic Alkali Liquids D002	1	TT	40,320 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
6/15/2009	CH248999B	002635705 FLE	Waste Caustic Alkali Liquids D002	1	TT	40,060 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
7/7/2009	CH248999B	002637854 FLE	Waste Caustic Alkali Liquids D002	1	TT	40,320 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
7/16/2009	CH248999B	002637855 FLE	Waste Caustic Alkali Liquids D002	1	TT	44,040 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
7/30/2009	CH248999B	002635863 FLE	Waste Caustic Alkali Liquids D002	1	TT	39680 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
8/13/2009	CH248999B	002698594 FLE	Waste Caustic Alkali Liquids D002	1	TT	41500 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
8/24/2009	CH248999B	002635862 FLE	Waste Caustic Alkali Liquids D002	1	TT	39320 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
9/3/2009	CH248999B	002698706 FLE	Waste Caustic Alkali Liquids D002	1	TT	43180 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
9/22/2009	CH248999B	002698831 FLE	Waste Caustic Alkali Liquids D002	1	TT	44140 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes

TT = Cargo tanks (tank trucks)

12.0 Spent Caustic Waste 2009

Pick-up Date	Profile #	Manifest #	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/ Consumption
				No.	Type				
10/1/2009	CH248999B	002698882FLE	Waste Caustic Alkali Liquids D002	1	TT	37780 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
10/15/2009	CH248999B	002698941FLE	Waste Caustic Alkali Liquids D002	1	TT	34,420 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
11/4/2009	CH248999B	003051098FLE	Waste Caustic Alkali Liquids D002	1	TT	43520 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
11/24/2009	CH248999B	003051166FLE	Waste Caustic Alkali Liquids D002	1	TT	36,980 P	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
12/2/2009	CH248999B	003051285FLE	Waste Caustic Alkali Liquids D002	1	TT	39,100	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
12/9/2009	CH248999B	003051286FLE	Waste Caustic Alkali Liquids D002	1	TT	41,400	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes
12/29/2009	CH248999B	003051398FLE	Waste Caustic Alkali Liquids D002	1	TT	27,620	Clean Harbors Grassy Mountain, UT Facility 3miles east, 7 miles north of Knolls Grantsville, UT 84029	Landfilled	Yes

TT = Cargo tanks (tank trucks)

12.0

WESTERN REFINING SOUTHWEST, INC. - BLOOMFIELD REFINERY
P.O. BOX 159
BLOOMFIELD, NEW MEXICO 87413

MONTHLY INJECTION WELL REPORT
DISCHARGE PLAN GW-130
NE1/4 SE1/4 SECTION 27, T29N, R11W
NMPM, SAN JUAN COUNTY, NEW MEXICO

PERIOD 2009	AMOUNT OF WATER FROM RIVER (GALLONS)	AMOUNT TO SOLAR EVAP PONDS (GALLONS)	TOTALIZER AMOUNT INJECTED (GALLONS)	DOWN-TIME (HRS)	INJECTION PRESSURE MAX (PSIA)	INJECTION PRESSURE MIN (PSIA)	INJECTION PRESSURE AVG (PSIA)	ANNULAR PRESSURE MAX (PSIA)	ANNULAR PRESSURE MIN (PSIA)	ANNULAR PRESSURE AVG (PSIA)	ON-LINE FLOW RATES MAX (GPM)	ON-LINE FLOW RATES MIN (GPM)	ON-LINE FLOW RATES AVG (GPM)
JAN	8,613,000	5,685,000	3,571,904	0	1138	1090	1111	300	113	216	91	39	81
FEB	8,257,000	8,838,500	3,221,260	0	1130	1104	1119	231	113	175	86	71	74
MAR	9,316,000	4,127,000	2,984,184	0	1122	1049.0	1108	191	170	178	*	*	67
APR	9,183,000	4,115,000	2,534,774	36	1142	1049	1117	228	143	184	104	14	62
MAY	9,421,000	4,177,000	3,669,236	0	1144	1050	1129	190	174	180	98	69	82
JUN	9,188,000	4,001,000	3,063,006	0	1138	997	1119	192	175	184	83	43	69
JUL	11,053,000	4,040,000	2,899,690	12	1143	1020	1120	190	93	176	106	68	86
AUG	10,282,000	3,878,000	3,255,566	0	1139	994	1097	181	100	154	93	47	78
SEP	8,630,000	3,992,000	3,225,841	12	1115	922	1058	188	136	164	98	24	75
OCT	4,960,000	1,430,000	2,047,955	264	1050	993	1075	249	106	159	95	61	80
NOV	7,231,000	4,048,000	2,405,228	108	1108	956	1025	177	61	126	96	34	66
DEC	2,345,000	1,918,000	1,163,711	180	995	916	957	197	127	141	53	18	36

*Flow meter out of service - estimated average from Feb. and April readings

Total amount injected in 2009 - 34,042,355 gallons

Section 13.0 Below Grade Testing

BLOOMFIELD REFINERY UNDERGROUN[illegible]ROCESS AND WASTEWATER LINES - Inspection & Repai[illegible]hedule

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	Effilent Wtr. Transfer Line	6	907 L/F	Effilent Pond Outlet Pump P-616	North Evaporation Pond	D-500-800-031	PVC	2012					
2	Effilent Wtr. Trans. Pump	6	908 L/F	North Evaporation Pond Outlet	Effilent Transfer Pump P-671	D-500-800-031	PVC	2012					
3	Effilent Wtr. Pump Disch.	6	2,797 L/F	Effilent Trans. Pump Disch.	Injection Well Building	D-500-800-031	PVC	2012	Oct-09	Pass	Hydrostatic	None	N/A
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 Southwest 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	218 L/F	Pipe Rack East Of LPG Bullets	Pipe Rack Southwest of Tk. # 31	N/A	Carbon steel	*Temporarily Out of Service					
10	ULSD Sales Line	12	916 L/F	Pipe Rack Southwest of Tk. # 31	Filter Pad Area North Of Loading Pad	N/A	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A
11	Unleaded Gasoline Sales	12	917 L/F	Pipe Rack Southwest of Tk. # 31	Filter Pad Area North Of Loading Pad	N/A	Carbon steel	2007	Nov-07	Pass	Praxair	None	N/A
12	Naphtha Sales from Tk #35	12	980 L/F	Pipe Rack Southwest of Tk. # 31	Filter Pad Area North Of Loading Pad	N/A	Carbon steel	out of service					
13	Lite Straight Run Product	4	218 L/F	Pipe Rack Southwest of Tk. # 31	Rack Area North Of B-23	N/A	Carbon steel	2011					
14	Poly Material To Storage	3	275 L/F	Pipe Rack Southwest of Tk. # 31	Area Northeast of B-21	N/A	Carbon steel	*Temporarily Out of Service					
15	Poly Unit Feed Line	3	275 L/F	Area Northeast of B-21	Pipe Rack Southwest of Tk. # 31	N/A	Carbon steel	*Temporarily Out of Service					
16	LPG Rerun Line	2	275 L/F	Area Northeast of B-21	Pipe Rack Southwest of Tk. # 31	N/A	Carbon steel	*Temporarily Out of Service					
17	Saturate To Storage	2	275 L/F	Pipe Rack Southwest of Tk. # 31	Area Northeast of B-21	N/A	Carbon steel	*Temporarily Out of Service					
18	C-4 To Storage	2	275 L/F	Pipe Rack Southwest of Tk. # 31	Area Northeast of B-21	N/A	Carbon steel	*Temporarily Out of Service					
19	C-3 To Storage	2	275 L/F	Pipe Rack Southwest of Tk. # 31	Area Northeast of B-21	N/A	Carbon steel	*Temporarily Out of Service					
20	JP-8 Sales Line	8	388 L/F	Pipe Rack Southwest of Tk. # 31	Out Of Service	N/A	Carbon steel	out of service					
21	Off Road Diesel Sales From Tk.18	6	389 L/F	Pipe Rack Southwest 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 ToTk. # 22	4	390 L/F	Area Northeast of B-21	Out of Service	N/A	Carbon steel	out of service					
23	Isomerate/Naptha Line	6	699 L/F	Low Rack West Of Tk.# 25	Area West of B-12	D-000-900-023	Carbon steel	2008	May-08	Pass	Praxair	None	N/A
24	Sub Grade Gasoine (Tk #32)	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	Premium Sales 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	NewTech 595-M-601	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	NewTech 595-M-601	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	NewTech 595-M-601	Carbon steel	2008	May-08	Pass	Praxair	None	N/A
29	Off-Road 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
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					

*All lines that are temporarily out of service due to suspension of refining operations were steamed out and are hydrocarbon free

13.0 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
31	Premiun 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	Unleaded GasolineSales 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	ULSD 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	330 L/F	From Tk. # 45 Outlet Nozzel	To P-707 & P-707A Pump Suction	D-700-500-140	Carbon steel	2010					
35	Ethanol Unloading Line	4	330 L/F	From P-706 Pump Discharge	To Tk. # 45 Inlet Nozzel	D-700-500-140	Carbon steel	2010					
36	Naphtha Unloading Line	6	420 L/F	Suction Manifold @ P-607A	Unloading line @ Tk. #18 and 19	B-600-500-296	Carbon steel	2007	Sep-07	Pass		None	N/A
37	Naptha Rundown To Tk.# 35	3	99	Line From North Pipe Rack Area	To Tk. # 35 Fill Nozzle	B-600-500-232	Carbon steel	*Temporarily Out of Service					
38	Naptha Feed Line to Unit	4	99	From P-607A Pump Discharge	To North Pipe Rack Feed To Units	B-600-500-236	Carbon steel	*Temporarily Out of Service					
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	*Temporarily Out of Service					
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	*Temporarily Out of Service					
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	*Temporarily Out of Service					
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	*Temporarily Out of Service					
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 (Desalter)	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 Main Sewer Box # 3	D-500-500-134	Carbon steel	2010					
52	Sewer Transfer Line	14	145 L/F	From Main Sewer Box # 3	To Observation Access Can (Precipitator)	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 Seperator	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 # 10	D-500-500-124	Carbon steel	2010					
59	Sewer Collection Manifold	10>4	TBD	Area Thru Reformer Pump Row	To Observation Access Can	D-500-500-098	Carbon steel	2010					

*All lines that are temporarily out of service due to suspension of refining operations were steamed out and are hydrocarbon free

J BLOOMFIELD REFINERY UNDERGROUN .OCESS AND WASTEWATER LINES - Inspection & Repa iedule

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 (Desalter)	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-103 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 (Precipitator)	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	86 L/F	P-224 Pump & Cat Surface Drain	To Sewer Transfer Line From FCC Process	D-201-500-001	Carbon steel	2011	Jul-09	Pass	Hydrostatic	None	N/A
70	Sewer Collect./Transfer Line	6	325 L/F	Gas Con Unit Collection M.H.	To FCC Sewer Box Manhole # 13	D-201-500-001	Carbon steel	2011	Jul-09	Pass	Hydrostatic	None	N/A
71	Sewer Transfer Line	10	35 L/F	From FCC Sewer Box M.H. # 13	To FCC Sewer Box # 14 (Roadway)	D-201-500-001	Carbon steel	2011	Jul-09	Pass	Hydrostatic	None	N/A
72	Sewer Transfer Line	10	TBD	From FCC Sewer Box M.H. #14	To 20" Inlet @ API	D-500-500-106	Carbon steel	2011					
73	Sewer Collection Manifold	6/4	335 L/F	Area @ & Around Gas Con. Unit	To Gas Con. Unit Sewer Collection	D-200-200-233	Carbon steel	2011	Jul-09	Pass	Hydrostatic	None	N/A
74	Sewer Transfer Line	10	TBD	From Treater Main Sewer Box # 16	To Sewer Box #15 - S.E. Of C-204	D-500-500-166	Carbon steel	2011					
75	Sewer Transfer Line	10	TBD	Sewer Box #15 - S.E. Of C-204	To 20" Inlet @ API	D-500-500-105	Carbon steel	2011					
76	Sewer Collection Manifold	10>4	410 L/F	Area In & Around Treater Unit	To Treater Sewer Box At South Side Of Unit	D-500-500-122	Carbon steel	2011	Sep-09	Pass	Hydrostatic	None	N/A
77	Sewer Collection Manifold	6>2	550 L/F	Area In & Around Poly Unit	To Inlet Bay @ API	D-500-500-126	Carbon steel	2011	May-09	Pass	Hydrostatic	None	N/A
78	Sewer Transfer Line	10	130 L/F	From Sewer Box # 17 @ DHT Unit	To Sewer Box # 18 @ S.E. Corner of Poly	D-500-500-097	Carbon steel	2011	Jun-09	Pass	Replaced with Stainless Steel Piping	None	N/A
79	Sewer Transfer Line	12	TBD	From Sewer Box # 18	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 Stg Tks.	Pipe Rack South of Crude Unloading Bays	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
83	Sewer Transfer Line	4	822	Discharge at Tk #37	Valve box at corner Northeast of DHT	AMEC 6/7	Carbon Steel/PVC						
84	Premium Sales Line from Tk #3 & 4	8	300	Area West of API Separator	DHT Option City		Carbon Steel	2007	Nov-07	Pass	Praxair	None	N/A

*All lines that are temporarily out of service due to suspension of refining operations were steamed out and are hydrocarbon free

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13.0 BLOOMFIELD REFINERY TANKS - Inspection & Repair Schedule (*schedule set according to API 650 & 653)

Tank #	Service	Normal Capacity (bbls)	Last Test/ Inspection	Test/ Inspection Method	Next Test/ Inspection Scheduled	Date OCD-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	2007	External (Conrete Liner)	2017	2007	11/10/07	None	N/A
10	SPENT CAUSTIC	360	2007	Internal	2017	2007	8/24/2007	Repaired Hatch & Floor	8/22/2007
11	LOW REFORMATE	50,358	2002	Internal	2012	2012	9/11/2002	Seal Replacement	9/18/2002
12	CAT / POLY GAS	50,358	1999	Internal	2010	2010	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	2010	2010	8/1/1999	Seal Replacement & Floor Repair	8/1/1999
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	2009	Internal	2019	2009	11/09/09	None	N/A
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/UTS*	2019	2009	04/01/09	None	N/A
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	2009	Internal/UTS*	2019	2009	06/11/09	None	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

*UTS = Utransonic Thickness Survey

13.0 BLOOMFIELD REFINERY SEWER BOXES - Inspection & Repair Schedule

Sewer Box Number	Location	Type Material	Drawing Reference	Actual Inspection Date	Inspection results Pass/Fail	Repairs/Maint Needed	Repairs/Maint Completion date
1	Northwest of Main Pipe Bridge	Concrete	D-500-500-134	4/28/2009	Pass	None	N/A
2	Southeast of Precipitator	Concrete	D-500-500-134	4/28/2009	Pass	None	N/A
3	Southeast of Main Blower	Concrete	D-500-500-134	4/29/2009	Pass	None	N/A
4	Southeast of Old Desalter	Concrete	D-500-500-134	4/29/2009	Pass	None	N/A
5	Southeast of Control Room	Concrete	D-500-500-134	4/29/2009	Pass	None	N/A
6	Southeast of Reformer	Concrete	D-500-500-124	5/4/2009	Pass	None	N/A
7	Southwest of Mainblower	Concrete	D-500-500-124	5/4/2009	Pass	None	N/A
8	South of E-113's	Concrete	D-500-500-124	4/30/2009	Pass	None	N/A
9	South of P-105's	Concrete	D-500-500-124	4/30/2009	Pass	None	N/A
10	West of New Desalter	Concrete	D-500-500-124	5/4/2009	Pass	None	N/A
11	South of T-102	Concrete	D-500-500-124	5/5/2009	Pass	None	N/A
12	South of P-103;s	Concrete	D-500-500-124	4/30/2009	Pass	None	N/A
13	In Roadway South of FCCU	Concrete	D-500-500-134	4/28/2009	Pass	None	N/A
14	In Roadway Southwest of C-801's	Concrete	D-500-500-134	5/5/2009	Pass	None	N/A
15	In Roadway Southeast of Wet Gas	Concrete	D-500-500-134	5/6/2009	Pass	None	N/A
16	South of Treater	Concrete	D-500-500-134	5/5/2009	Pass	None	N/A
17	In Roadway East of DHT	Concrete	D-500-500-134	5/6/2009	Pass	None	N/A
18	In Roadway Southeast of Poly Unit	Concrete	D-500-500-134	5/6/2009	Pass	None	N/A

13.0 BLOOMFIELD REFINERY SUMPS - Inspection & Repair Schedule

Sump Number	Location	Type Material	Drawing Reference	Actual Inspection Date	Inspection results Pass/Fail	Repairs/Maint Needed	Repairs/Maint Completion date
16	Sump @ S.W. Side Of Tk. 3	Concrete	D-000-900-023	6/8/2009	Pass	None	N/A
17	Sump Between Tk. 3 & 4	Concrete	D-000-900-023	6/8/2009	Pass	None	N/A
18	Sump Between Tk. 4 & 5	Concrete	D-000-900-023	6/8/2009	Pass	None	N/A
19	Sump @ N.Side Of Tk. 5	Concrete	D-000-900-023	6/8/2009	Pass	None	N/A
20	Sump Between Tk. 11 & 12	Concrete	D-000-900-023	6/8/2009	Pass	None	N/A
21	Sump Between Tk. 13 & 14	Concrete	D-000-900-023	6/8/2009	Pass	None	N/A
22	Sump @ N. Side Of Tk. 17	Concrete	D-000-900-023	6/10/2009	Pass	None	N/A
23	Sump @ N.E. Side Of Tk. 18	Concrete	D-000-900-023	6/9/2009	Pass	None	N/A
24	Sump @ N.E. Side Of Tk. 19	Concrete	D-000-900-023	6/9/2009	Pass	None	N/A
25	Sump @ S.W. Side Of Tk. 20	DW Steel	D-000-900-023	6/9/2009	Pass	None	N/A
26	Sump @ S. Side Of Tk. 23	Concrete	D-000-900-023	6/11/2009	Pass	None	N/A
27	Sump @ E. Side Of Tk. 24	DW Steel	D-000-900-023	6/15/2009	Pass	None	N/A
28	Sump @ E. Side Of Tk. 25	DW Steel	D-000-900-023	6/15/2009	Pass	None	N/A
29	Sump @ N.W. Side Of Tk. 26	Concrete	D-000-900-023	6/15/2009	Pass	None	N/A
30	Sump @ S.E. Side Of Tk. 27	Concrete	D-000-900-023	6/11/2009	Pass	None	N/A
31	Sump @ West Side Of Tk. 28	Concrete	D-000-900-023	6/10/2009	Pass	None	N/A
32	Sump @ N.E. Side Of Tk. 29	Concrete	D-000-900-023	6/15/2009	Pass	None	N/A
33	Sump @ S.W. Side Of Tk. 30	Concrete	D-000-900-023	6/15/2009	Pass	None	N/A
34	Sump @ N.W. Side Of Tk. 31	Concrete	D-000-900-023	6/10/2009	Pass	None	N/A
35	Sump @ S.E. Side Of Tk. 31	Concrete	D-000-900-023	6/10/2009	Pass	None	N/A
36	Sump @ East Side Of Tk. 32	Concrete	D-000-900-023	6/8/2009	Pass	None	N/A
37	Sump @ N.E. Side Of Tk. 35	DW Steel	D-000-900-023	6/9/2009	Pass	Replaced in Kind	8-20-09 - Pass
38	Sump @ N.E. Side Of Tk. 36	DW Steel	D-000-900-023	6/8/2009	Pass	None	N/A
39	Sump @ S. Side Of Tk. 18	Concrete	D-000-900-023	6/9/2009	Pass	None	N/A
40	Sump @ S. Side Of Tk. 19	Concrete	D-000-900-023	6/10/2009	Pass	None	N/A
41	Sump @ S. Side Of Flare	Concrete	D-000-900-023	6/9/2009	Pass	None	N/A
42	Sump @ N.W. Of Precipitator	Concrete	D-000-900-023	6/15/2009	Pass	None	N/A

Appendix A North Barrier Wall

Title	Tab

North Barrier Wall Measured Depth to Groundwater

North Barrier Wall Analytical Data

Observation Well Fluids Monitoring Jan. 2009

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	1/12/2009	5506.62	12.26	NPP	11.56	5495.06	NPP
	1/26/2009	5506.62	12.26	NPP	11.58	5495.04	NPP
OW 1+50	1/12/2009	5508.03	14.36	13.37	13.56	5494.62	0.19
	1/26/2009	5508.03	14.36	13.40	13.60	5494.59	0.20
OW 3+85	1/12/2009	5507.31	15.06	13.46	13.50	5493.84	0.04
	1/26/2009	5507.31	15.06	NPP	12.87	5494.44	NPP
OW 5+50	1/12/2009	5507.59	13.67	NPP	13.26	5494.33	NPP
	1/26/2009	5507.59	13.67	NPP	13.30	5494.29	NPP
OW 6+70	1/12/2009	5504.78	14.67	NPP	NWP		NPP
	1/26/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	1/12/2009	5506.53	15.99	NPP	NWP		NPP
	1/26/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	1/12/2009	5506.70	16.59	NPP	12.44	5494.26	NPP
	1/26/2009	5506.70	16.59	NPP	12.35	5494.35	NPP
OW 14+10	1/12/2009	5508.14	12.96	NPP	NWP		NPP
	1/26/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	1/12/2009	5508.43	15.21	NPP	12.71	5495.72	NPP
	1/26/2009	5508.43	15.21	NPP	12.56	5495.87	NPP

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring Jan. 2009

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	1/12/2009	5508.03	13.00	NPP	12.81	5495.22	NPP
	1/26/2009	5508.03	13.00	NPP	12.03	5496.00	NPP
OW 22+00	1/12/2009	5506.91	14.16	NPP	10.61	5496.30	NPP
	1/26/2009	5506.91	14.16	NPP	11.04	5495.87	NPP
OW 23+10	1/12/2009	5514.12	18.34	NPP	16.23	5497.89	NPP
	1/26/2009	5514.12	18.34	NPP	16.23	5497.89	NPP
OW 23+90	1/12/2009	5515.18	18.01	NPP	17.09	5498.09	NPP
	1/26/2009	5515.18	18.01	NPP	17.11	5498.07	NPP
OW 25+70	1/12/2009	5509.00	13.98	NPP	10.74	5498.26	NPP
	1/26/2009	5509.00	13.98	NPP	10.73	5498.27	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring Jan. 2009

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	1/12/2009	5506.68	14.09	NPP	8.31	5498.37	NPP
	1/26/2009	5506.68	14.09	NPP	8.35	5498.33	NPP
CW 1+50	1/12/2009	5505.13	13.74	NPP	6.79	5498.34	NPP
	1/26/2009	5505.13	13.74	NPP	6.78	5498.35	NPP
CW 3+85	1/12/2009	5503.87	13.11	NPP	5.60	5498.27	NPP
	1/26/2009	5503.87	13.11	NPP	5.50	5498.37	NPP
CW 5+50	1/12/2009	5503.76	12.27	NPP	6.36	5497.40	NPP
	1/26/2009	5503.76	12.27	NPP	6.29	5497.47	NPP
CW 6+70	1/12/2009	5503.84	11.45	NPP	6.72	5497.12	NPP
	1/26/2009	5503.84	11.45	NPP	6.57	5497.27	NPP
CW 8+10	1/12/2009	5504.02	11.63	NPP	7.61	5496.41	NPP
	1/26/2009	5504.02	11.63	NPP	7.46	5496.56	NPP
CW 8+45	1/12/2009	5503.80	12.6	7.75	7.76	5496.05	0.01
	1/26/2009	5503.80	12.6	7.56	7.57	5496.24	0.01
CW 11+15	1/12/2009	5503.95	12.27	NPP	5.86	5498.09	NPP
	1/26/2009	5503.95	12.27	NPP	5.83	5498.12	NPP
CW 14+10	1/12/2009	5504.39	13.05	NPP	6.42	5497.97	NPP
	1/26/2009	5504.39	13.05	NPP	6.36	5498.03	NPP

NPP = No Product Present NWP = No Water Present

Collection Well Fluids Monitoring Jan. 2009

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	1/12/2009	5504.32	12.86	NPP	6.28	5498.04	NPP
	1/26/2009	5504.32	12.86	NPP	6.25	5498.07	NPP
CW 19+50	1/12/2009	5504.52	9.99	NPP	6.29	5498.23	NPP
	1/26/2009	5504.52	9.99	NPP	6.21	5498.31	NPP
CW 22+00	1/12/2009	5508.04	12.34	NPP	8.97	5499.07	NPP
	1/26/2009	5508.04	12.34	NPP	8.94	5499.10	NPP
CW 23+10	1/12/2009	5510.04	14.65	NPP	10.64	5499.40	NPP
	1/26/2009	5510.04	14.65	NPP	10.62	5499.42	NPP
CW 23+90	1/12/2009	5507.32	11.72	NPP	8.13	5499.19	NPP
	1/26/2009	5507.32	11.72	NPP	8.11	5499.21	NPP
CW 25+95	1/12/2009	5505.90	12.25	NPP	7.17	5498.73	NPP
	1/26/2009	5505.90	12.25	NPP	7.15	5498.75	NPP

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring Jan. 2009

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	1/12/2009	5510.31	22.94	NPP	11.39	5498.92	NPP
	1/26/2009	5510.31	22.94	NPP	11.38	5498.93	NPP
MW #12	1/12/2009	5501.61	14.98	NPP	10.07	5491.54	NPP
	1/26/2009	5501.61	14.98	NPP	10.09	5491.52	NPP
MW #20	1/12/2009	5519.90	27.13	20.58	20.86	5499.26	0.28
	1/26/2009	5519.90	27.13	20.56	20.77	5499.30	0.21
MW #21	1/12/2009	5521.99	30.38	21.75	21.83	5500.22	0.08
	1/26/2009	5521.99	30.38	21.75	21.84	5500.22	0.09
MW #39	1/12/2009	5520.83	38.34	NPP	25.79	5495.04	NPP
	1/26/2009	5520.83	38.34	NPP	25.53	5495.30	NPP
MW #45	1/12/2009	5506.36	16.92	NPP	11.74	5494.62	NPP
	1/26/2009	5506.36	16.92	NPP	11.63	5494.73	NPP
MW #46	1/12/2009	5504.65	10.39	NPP	NWP		NPP
	1/26/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	1/12/2009	5506.77	14.28	NPP	12.25	5494.52	NPP
	1/26/2009	5506.77	14.28	NPP	12.29	5494.48	NPP

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring Feb. 2009

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	2/9/2009	5506.62	12.26	NPP	11.61	5495.01	NPP
	2/23/2009	5506.62	12.26	NPP	11.67	5494.95	NPP
OW 1+50	2/9/2009	5508.03	14.36	13.43	13.64	5494.56	0.21
	2/23/2009	5508.03	14.36	13.45	13.68	5494.53	0.23
OW 3+85	2/9/2009	5507.31	15.06	NPP	12.92	5494.39	NPP
	2/23/2009	5507.31	15.06	NPP	12.93	5494.38	NPP
OW 5+50	2/9/2009	5507.59	13.67	NPP	13.32	5494.27	NPP
	2/23/2009	5507.59	13.67	NPP	13.36	5494.23	NPP
OW 6+70	2/9/2009	5504.78	14.67	NPP	NWP		NPP
	2/23/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	2/9/2009	5506.53	15.99	NPP	NWP		NPP
	2/23/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	2/9/2009	5506.70	16.59	NPP	12.35	5494.35	NPP
	2/23/2009	5506.70	16.59	NPP	12.47	5494.23	NPP
OW 14+10	2/9/2009	5508.14	12.96	NPP	NWP		NPP
	2/23/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	2/9/2009	5508.43	15.21	NPP	12.62	5495.81	NPP
	2/23/2009	5508.43	15.21	NPP	12.68	5495.75	NPP

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring Feb. 2009

Appendix A - Tab 2.0

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	2/9/2009	5508.03	13.00	NPP	11.8	5496.23	NPP
	2/23/2009	5508.03	13.00	NPP	11.94	5496.09	NPP
OW 22+00	2/9/2009	5506.91	14.16	NPP	11.24	5495.67	NPP
	2/23/2009	5506.91	14.16	NPP	11.26	5495.65	NPP
OW 23+10	2/9/2009	5514.12	18.34	NPP	16.23	5497.89	NPP
	2/23/2009	5514.12	18.34	NPP	16.25	5497.87	NPP
OW 23+90	2/9/2009	5515.18	18.01	NPP	17.09	5498.09	NPP
	2/23/2009	5515.18	18.01	NPP	17.08	5498.10	NPP
OW 25+70	2/9/2009	5509.00	13.98	NPP	10.72	5498.28	NPP
	2/23/2009	5509.00	13.98	NPP	10.74	5498.26	NPP

NPP = No Product Present NWP = No Water Present

Collection Well Fluids Monitoring Feb. 2009

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	2/9/2009	5506.68	14.09	NPP	8.42	5498.26	NPP
	2/23/2009	5506.68	14.09	NPP	8.42	5498.26	NPP
CW 1+50	2/9/2009	5505.13	13.74	NPP	6.80	5498.33	NPP
	2/23/2009	5505.13	13.74	NPP	6.73	5498.40	NPP
CW 3+85	2/9/2009	5503.87	13.11	NPP	5.50	5498.37	NPP
	2/23/2009	5503.87	13.11	NPP	5.48	5498.39	NPP
CW 5+50	2/9/2009	5503.76	12.27	NPP	6.31	5497.45	NPP
	2/23/2009	5503.76	12.27	NPP	6.36	5497.40	NPP
CW 6+70	2/9/2009	5503.84	11.45	NPP	6.62	5497.22	NPP
	2/23/2009	5503.84	11.45	NPP	6.66	5497.18	NPP
CW 8+10	2/9/2009	5504.02	11.63	NPP	7.44	5496.58	NPP
	2/9/2009	5504.02	11.63	NPP	7.52	5496.50	NPP
CW 8+45	2/9/2009	5503.80	12.6	7.56	7.57	5496.24	0.01
	2/23/2009	5503.80	12.6	7.67	7.68	5496.13	0.01
CW 11+15	2/9/2009	5503.95	12.27	NPP	5.80	5498.15	NPP
	2/23/2009	5503.95	12.27	NPP	5.86	5498.09	NPP
CW 14+10	2/9/2009	5504.39	13.05	NPP	6.37	5498.02	NPP
	2/23/2009	5504.39	13.05	NPP	6.46	5497.93	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring Feb. 2009

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	2/9/2009	5504.32	12.86	NPP	6.62	5497.70	NPP
	2/23/2009	5504.32	12.86	NPP	6.28	5498.04	NPP
CW 19+50	2/9/2009	5504.52	9.99	NPP	6.17	5498.35	NPP
	2/23/2009	5504.52	9.99	NPP	6.17	5498.35	NPP
CW 22+00	2/9/2009	5508.04	12.34	NPP	8.94	5499.10	NPP
	2/23/2009	5508.04	12.34	NPP	8.97	5499.07	NPP
CW 23+10	2/9/2009	5510.04	14.65	NPP	10.62	5499.42	NPP
	2/23/2009	5510.04	14.65	NPP	10.64	5499.40	NPP
CW 23+90	2/9/2009	5507.32	11.72	NPP	8.11	5499.21	NPP
	2/23/2009	5507.32	11.72	NPP	8.12	5499.20	NPP
CW 25+95	2/9/2009	5505.90	12.25	NPP	7.15	5498.75	NPP
	2/23/2009	5505.90	12.25	NPP	7.16	5498.74	NPP

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring Feb. 2009

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	2/9/2009	5510.31	22.94	NPP	11.39	5498.92	NPP
	2/23/2009	5510.31	22.94	NPP	11.48	5498.83	NPP
MW #12	2/9/2009	5501.61	14.98	NPP	10.09	5491.52	NPP
	2/23/2009	5501.61	14.98	NPP	10.14	5491.47	NPP
MW #20	2/9/2009	5519.90	27.13	20.55	20.75	5499.31	0.20
	2/23/2009	5519.90	27.13	20.56	20.82	5499.29	0.26
MW #21	2/9/2009	5521.99	30.38	21.74	21.82	5500.23	0.08
	2/23/2009	5521.99	30.38	21.76	21.85	5500.21	0.09
MW #39	2/9/2009	5520.83	38.34	NPP	25.55	5495.28	NPP
	2/23/2009	5520.83	38.34	NPP	25.60	5495.23	NPP
MW #45	2/9/2009	5506.36	16.92	NPP	11.64	5494.72	NPP
	2/23/2009	5506.36	16.92	11.76	11.77	5494.60	0.01
MW #46	2/9/2009	5504.65	10.39	NPP	NWP		NPP
	2/23/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	2/9/2009	5506.77	14.28	NPP	12.32	5494.45	NPP
	2/23/2009	5506.77	14.28	NPP	12.38	5494.39	NPP

NPP = No Product Present NWP = No Water Present

Observation Well Fluids Monitoring March 2009

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	3/9/2009	5506.62	12.26	NPP	11.69	5494.93	NPP
	3/23/2009	5506.62	12.26	NPP	11.72	5494.90	NPP
OW 1+50	3/9/2009	5508.03	14.36	13.50	13.72	5494.49	0.22
	3/23/2009	5508.03	14.36	13.54	13.77	5494.44	0.23
OW 3+85	3/9/2009	5507.31	15.06	NPP	12.94	5494.37	NPP
	3/23/2009	5507.31	15.06	NPP	13.01	5494.30	NPP
OW 5+50	3/9/2009	5507.59	13.67	NPP	13.36	5494.23	NPP
	3/23/2009	5507.59	13.67	NPP	13.38	5494.21	NPP
OW 6+70	3/9/2009	5504.78	14.67	NPP	NWP		NPP
	3/23/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	3/9/2009	5506.53	15.99	NPP	NWP		NPP
	3/23/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	3/9/2009	5506.70	16.59	NPP	12.41	5494.29	NPP
	3/23/2009	5506.70	16.59	NPP	12.38	5494.32	NPP
OW 14+10	3/9/2009	5508.14	12.96	NPP	NWP		NPP
	3/23/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	3/9/2009	5508.43	15.21	NPP	12.60	5495.83	NPP
	3/23/2009	5508.43	15.21	NPP	12.70	5495.73	NPP

NPP = No Product Present NWP = No Water Present

Observation Well Fluids Monitoring March 2009

Appendix A - Tab 3.0

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	3/9/2009	5508.03	13.00	NPP	11.94	5496.09	NPP
	3/23/2009	5508.03	13.00	NPP	12.07	5495.96	NPP
OW 22+00	3/9/2009	5506.91	14.16	NPP	11.43	5495.48	NPP
	3/23/2009	5506.91	14.16	NPP	11.53	5495.38	NPP
OW 23+10	3/9/2009	5514.12	18.34	NPP	16.26	5497.86	NPP
	3/23/2009	5514.12	18.34	NPP	16.25	5497.87	NPP
OW 23+90	3/9/2009	5515.18	18.01	NPP	17.1	5498.08	NPP
	3/23/2009	5515.18	18.01	NPP	17.10	5498.08	NPP
OW 25+70	3/9/2009	5509.00	13.98	NPP	10.73	5498.27	NPP
	3/23/2009	5509.00	13.98	NPP	10.71	5498.29	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring March 2009

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	3/9/2009	5506.68	14.09	NPP	8.48	5498.20	NPP
	3/23/2009	5506.68	14.09	NPP	8.52	5498.16	NPP
CW 1+50	3/9/2009	5505.13	13.74	NPP	6.84	5498.29	NPP
	3/23/2009	5505.13	13.74	NPP	6.89	5498.24	NPP
CW 3+85	3/9/2009	5503.87	13.11	NPP	5.52	5498.35	NPP
	3/23/2009	5503.87	13.11	NPP	5.56	5498.31	NPP
CW 5+50	3/9/2009	5503.76	12.27	NPP	6.37	5497.39	NPP
	3/23/2009	5503.76	12.27	NPP	6.37	5497.39	NPP
CW 6+70	3/9/2009	5503.84	11.45	NPP	6.63	5497.21	NPP
	3/23/2009	5503.84	11.45	NPP	6.63	5497.21	NPP
CW 8+10	3/9/2009	5504.02	11.63	NPP	7.45	5496.57	NPP
	3/23/2009	5504.02	11.63	NPP	7.42	5496.60	NPP
CW 8+45	3/9/2009	5503.80	12.6	7.57	7.58	5496.23	0.01
	3/23/2009	5503.80	12.6	7.54	7.57	5496.25	0.03
CW 11+15	3/9/2009	5503.95	12.27	NPP	5.83	5498.12	NPP
	3/23/2009	5503.95	12.27	NPP	5.87	5498.08	NPP
CW 14+0	3/9/2009	5504.39	13.05	NPP	6.41	5497.98	NPP
	3/23/2009	5504.39	13.05	NPP	16.43	5487.96	NPP

NPP = No Product Present NWP = No Water Present

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Collection Well Fluids Monitoring March 2009

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	3/9/2009	5504.32	12.86	NPP	6.26	5498.06	NPP
	3/23/2009	5504.32	12.86	NPP	6.29	5498.03	NPP
CW 19+50	3/9/2009	5504.52	9.99	NPP	6.20	5498.32	NPP
	3/23/2009	5504.52	9.99	NPP	6.23	5498.29	NPP
CW 22+00	3/9/2009	5508.04	12.34	NPP	8.95	5499.09	NPP
	3/23/2009	5508.04	12.34	NPP	8.96	5499.08	NPP
CW 23+10	3/9/2009	5510.04	14.65	NPP	10.62	5499.42	NPP
	3/23/2009	5510.04	14.65	NPP	10.62	5499.42	NPP
CW 23+90	3/9/2009	5507.32	11.72	NPP	8.12	5499.20	NPP
	3/23/2009	5507.32	11.72	NPP	8.12	5499.20	NPP
CW 25+95	3/9/2009	5505.90	12.25	NPP	7.16	5498.74	NPP
	3/23/2009	5505.90	12.25	NPP	7.16	5498.74	NPP

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring March 2009

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	3/9/2009	5510.31	22.94	NPP	11.48	5498.83	NPP
	3/23/2009	5510.31	22.94	NPP	11.51	5498.80	NPP
MW #12	3/9/2009	5501.61	14.98	NPP	10.17	5491.44	NPP
	3/23/2009	5501.61	14.98	NPP	10.21	5491.40	NPP
MW #20	3/9/2009	5519.90	27.13	20.55	20.78	5499.30	0.23
	3/23/2009	5519.90	27.13	20.55	20.78	5499.30	0.23
MW #21	3/9/2009	5521.99	30.38	21.74	21.82	5500.23	0.08
	3/23/2009	5521.99	30.38	21.75	21.85	5500.22	0.10
MW #39	3/9/2009	5520.83	38.34	NPP	25.56	5495.27	NPP
	3/23/2009	5520.83	38.34	NPP	25.54	5495.29	NPP
MW #45	3/9/2009	5506.36	16.92	NPP	11.67	5494.69	NPP
	3/23/2009	5506.36	16.92	NPP	11.67	5494.69	NPP
MW #46	3/9/2009	5504.65	10.39	NPP	NWP		NPP
	3/23/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	3/9/2009	5506.77	14.28	NPP	12.41	5494.36	NPP
	3/23/2009	5506.77	14.28	NPP	12.45	5494.32	NPP

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring April 2009

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	4/6/2009	5506.62	12.26	NPP	11.77	5494.85	NPP
	4/20/2009	5506.62	12.26	NPP	11.82	5494.80	NPP
OW 1+50	4/6/2009	5508.03	14.36	13.52	14.03	5494.41	0.51
	4/20/2009	5508.03	14.36	13.54	14.08	5494.38	0.54
OW 3+85	4/6/2009	5507.31	15.06	NPP	13.07	5494.24	NPP
	4/20/2009	5507.31	15.06	NPP	13.11	5494.20	NPP
OW 5+50	4/6/2009	5507.59	13.67	NPP	13.39	5494.20	NPP
	4/20/2009	5507.59	13.67	NPP	13.39	5494.20	NPP
OW 6+70	4/6/2009	5504.78	14.67	NPP	NWP		NPP
	4/20/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	4/6/2009	5506.53	15.99	NPP	NWP		NPP
	4/20/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	4/6/2009	5506.70	16.59	NPP	12.46	5494.24	NPP
	4/20/2009	5506.70	16.59	NPP	12.45	5494.25	NPP
OW 14+10	4/6/2009	5508.14	12.96	NPP	NWP		NPP
	4/20/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	4/6/2009	5508.43	15.21	NPP	12.85	5495.58	NPP
	4/20/2009	5508.43	15.21	NPP	12.81	5495.62	NPP

NPP = No Product Present NWP = No Water Present

Observation Well Fluids Monitoring April 2009

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	4/6/2009	5508.03	13.00	NPP	12.26	5495.77	NPP
	4/20/2009	5508.03	13.00	NPP	12.52	5495.51	NPP
OW 22+00	4/6/2009	5506.91	14.16	NPP	11.78	5495.13	NPP
	4/20/2009	5506.91	14.16	NPP	11.87	5495.04	NPP
OW 23+10	4/6/2009	5514.12	18.34	NPP	16.25	5497.87	NPP
	4/20/2009	5514.12	18.34	NPP	16.31	5497.81	NPP
OW 23+90	4/6/2009	5515.18	18.01	NPP	17.11	5498.07	NPP
	4/20/2009	5515.18	18.01	NPP	17.09	5498.09	NPP
OW 25+70	4/6/2009	5509.00	13.98	NPP	10.73	5498.27	NPP
	4/20/2009	5509.00	13.98	NPP	10.73	5498.27	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring April 2009

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	4/6/2009	5506.68	14.09	NPP	8.53	5498.15	NPP
	4/20/2009	5506.68	14.09	NPP	8.45	5498.23	NPP
CW 1+50	4/6/2009	5505.13	13.74	NPP	6.83	5498.30	NPP
	4/20/2009	5505.13	13.74	NPP	6.82	5498.31	NPP
CW 3+85	4/6/2009	5503.87	13.11	NPP	5.55	5498.32	NPP
	4/20/2009	5503.87	13.11	NPP	5.49	5498.38	NPP
CW 5+50	4/6/2009	5503.76	12.27	NPP	6.39	5497.37	NPP
	4/20/2009	5503.76	12.27	NPP	6.32	5497.44	NPP
CW 6+70	4/6/2009	5503.84	11.45	NPP	6.67	5497.17	NPP
	4/20/2009	5503.84	11.45	NPP	6.61	5497.23	NPP
CW 8+10	4/6/2009	5504.02	11.63	NPP	7.53	5496.49	NPP
	4/20/2009	5504.02	11.63	NPP	7.47	5496.55	NPP
CW 8+45	4/6/2009	5503.80	12.6	7.70	7.71	5496.10	0.01
	4/20/2009	5503.80	12.6	7.62	7.63	5496.18	0.01
CW 11+15	4/6/2009	5503.95	12.27	NPP	5.94	5498.01	NPP
	4/20/2009	5503.95	12.27	NPP	5.92	5498.03	NPP
CW 14+10	4/6/2009	5504.39	13.05	NPP	6.58	5497.81	NPP
	4/20/2009	5504.39	13.05	NPP	6.53	5497.86	NPP

NPP = No Product Present NWP = No Water Present

Collection Well Fluids Monitoring April 2009

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	4/6/2009	5504.32	12.86	NPP	6.35	5497.97	NPP
	4/20/2009	5504.32	12.86	NPP	6.33	5497.99	NPP
CW 19+50	4/6/2009	5504.52	9.99	NPP	6.30	5498.22	NPP
	4/20/2009	5504.52	9.99	NPP	6.32	5498.20	NPP
CW 22+00	4/6/2009	5508.04	12.34	NPP	8.99	5499.05	NPP
	4/20/2009	5508.04	12.34	NPP	8.98	5499.06	NPP
CW 23+10	4/6/2009	5510.04	14.65	NPP	10.65	5499.39	NPP
	4/20/2009	5510.04	14.65	10.63	10.63	5499.41	0.00
CW 23+90	4/6/2009	5507.32	11.72	NPP	8.12	5499.20	NPP
	4/20/2009	5507.32	11.72	NPP	8.09	5499.23	NPP
CW 25+95	4/6/2009	5505.90	12.25	7.13	7.14	5498.77	0.01
	4/20/2009	5505.90	12.25	NPP	7.14	5498.76	NPP

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring April 2009

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	4/6/2009	5510.31	22.94	NPP	11.57	5498.74	NPP
	4/20/2009	5510.31	22.94	NPP	11.45	5498.86	NPP
MW #12	4/6/2009	5501.61	14.98	NPP	10.27	5491.34	NPP
	4/20/2009	5501.61	14.98	NPP	10.32	5491.29	NPP
MW #20	4/6/2009	5519.90	27.13	20.55	20.84	5499.29	0.29
	4/20/2009	5519.90	27.13	20.57	20.83	5499.28	0.26
MW #21	4/6/2009	5521.99	30.38	21.77	21.87	5500.20	0.10
	4/20/2009	5521.99	30.38	21.80	21.91	5500.17	0.11
MW #39	4/6/2009	5520.83	38.34	NPP	25.62	5495.21	NPP
	4/20/2009	5520.83	38.34	NPP	25.73	5495.10	NPP
MW #45	4/6/2009	5506.36	16.92	NPP	11.81	5494.55	NPP
	4/20/2009	5506.36	16.92	NPP	11.78	5494.58	NPP
MW #46	4/6/2009	5504.65	10.39	NPP	NWP		NPP
	4/20/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	4/6/2009	5506.77	14.28	NPP	12.50	5494.27	NPP
	4/20/2009	5506.77	14.28	12.51	12.52	5494.26	0.01

NPP = No Product Present NWP = No Water Present

Observation Well Fluids Monitoring MAY 2009

Appendix A - Tab 5.0

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	5/7/2009	5506.62	12.26	NPP	11.67	5494.95	NPP
	5/18/2009	5506.62	12.26	NPP	11.6	5495.02	NPP
OW 1+50	5/7/2009	5508.03	14.36	13.56	14.05	5494.37	0.49
	5/18/2009	5508.03	14.36	13.54	14.04	5494.39	0.50
OW 3+85	5/7/2009	5507.31	15.06	NPP	13.12	5494.19	NPP
	5/18/2009	5507.31	15.06	NPP	13.15	5494.16	NPP
OW 5+50	5/7/2009	5507.59	13.67	NPP	13.42	5494.17	NPP
	5/18/2009	5507.59	13.67	NPP	13.44	5494.15	NPP
OW 6+70	5/7/2009	5504.78	14.67	NPP	NWP		NPP
	5/18/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	5/7/2009	5506.53	15.99	NPP	NWP		NPP
	5/18/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	5/7/2009	5506.70	16.59	NPP	12.37	5494.33	NPP
	5/18/2009	5506.70	16.59	NPP	12.46	5494.24	NPP
OW 14+10	5/7/2009	5508.14	12.96	NPP	NWP		NPP
	5/18/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	5/7/2009	5508.43	15.21	NPP	12.85	5495.58	NPP
	5/18/2009	5508.43	15.21	NPP	12.59	5495.84	NPP

NPP = No Product Present   NWP = No Water Present

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Observation Well Fluids Monitoring May 2009

Appendix A - Tab 5.0

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	5/7/2009	5508.03	13.00	NPP	12.56	5495.47	NPP
	5/18/2009	5508.03	13.00	NPP	12.68	5495.35	NPP
OW 22+00	5/7/2009	5506.91	14.16	NPP	11.91	5495.00	NPP
	5/18/2009	5506.91	14.16	NPP	12.02	5494.89	NPP
OW 23+10	5/7/2009	5514.12	18.34	NPP	16.28	5497.84	NPP
	5/18/2009	5514.12	18.34	NPP	16.30	5497.82	NPP
OW 23+90	5/7/2009	5515.18	18.01	NPP	17.11	5498.07	NPP
	5/18/2009	5515.18	18.01	NPP	17.16	5498.02	NPP
OW 25+70	5/7/2009	5509.00	13.98	NPP	10.73	5498.27	NPP
	5/18/2009	5509.00	13.98	NPP	10.73	5498.27	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring May 2009

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	5/7/2009	5506.68	14.09	NPP	8.34	5498.34	NPP
	5/18/2009	5506.68	14.09	NPP	8.34	5498.34	NPP
CW 1+50	5/7/2009	5505.13	13.74	NPP	6.81	5498.32	NPP
	5/18/2009	5505.13	13.74	NPP	6.80	5498.33	NPP
CW 3+85	5/7/2009	5503.87	13.11	NPP	5.52	5498.35	NPP
	5/18/2009	5503.87	13.11	NPP	5.51	5498.36	NPP
CW 5+50	5/7/2009	5503.76	12.27	NPP	6.3	5497.46	NPP
	5/18/2009	5503.76	12.27	NPP	6.28	5497.48	NPP
CW 6+70	5/7/2009	5503.84	11.45	NPP	6.60	5497.24	NPP
	5/18/2009	5503.84	11.45	NPP	6.61	5497.23	NPP
CW 8+10	5/7/2009	5504.02	11.63	NPP	7.41	5496.61	NPP
	5/18/2009	5504.02	11.63	NPP	7.42	5496.60	NPP
CW 8+45	5/7/2009	5503.80	12.6	7.52	7.53	5496.28	0.01
	5/18/2009	5503.80	12.6	NPP	7.57	5496.23	NPP
CW 11+15	5/7/2009	5503.95	12.27	NPP	5.89	5498.06	NPP
	5/18/2009	5503.95	12.27	NPP	5.91	5498.04	NPP
CW 14+10	5/7/2009	5504.39	13.05	NPP	6.47	5497.92	NPP
	5/18/2009	5504.39	13.05	NPP	6.45	5497.94	NPP

NPP = No Product Present NWP = No Water Present

Collection Well Fluids Monitoring May 2009

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	5/7/2009	5504.32	12.86	NPP	6.3	5498.02	NPP
	5/18/2009	5504.32	12.86	NPP	6.31	5498.01	NPP
CW 19+50	5/7/2009	5504.52	9.99	NPP	6.27	5498.25	NPP
	5/18/2009	5504.52	9.99	NPP	6.29	5498.23	NPP
CW 22+00	5/7/2009	5508.04	12.34	NPP	8.96	5499.08	NPP
	5/18/2009	5508.04	12.34	NPP	8.95	5499.09	NPP
CW 23+10	5/7/2009	5510.04	14.65	NPP	10.61	5499.43	NPP
	5/18/2009	5510.04	14.65	NPP	10.55	5499.49	NPP
CW 23+90	5/7/2009	5507.32	11.72	NPP	8.08	5499.24	NPP
	5/18/2009	5507.32	11.72	NPP	8.07	5499.25	NPP
CW 25+95	5/7/2009	5505.90	12.25	7.13	7.14	5498.77	0.01
	5/18/2009	5505.90	12.25	NPP	7.13	5498.77	NPP

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring May 2009

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	5/7/2009	5510.31	22.94	NPP	11.19	5499.12	NPP
	5/18/2009	5510.31	22.94	NPP	11.15	5499.16	NPP
MW #12	5/7/2009	5501.61	14.98	NPP	10.35	5491.26	NPP
	5/18/2009	5501.61	14.98	NPP	10.45	5491.16	NPP
MW #20	5/7/2009	5519.90	27.13	20.61	21.07	5499.20	0.46
	5/18/2009	5519.90	27.13	20.63	21.02	5499.19	0.39
MW #21	5/7/2009	5521.99	30.38	21.75	21.84	5500.22	0.09
	5/18/2009	5521.99	30.38	21.75	21.85	5500.22	0.10
MW #39	5/7/2009	5520.83	38.34	NPP	25.78	5495.05	NPP
	5/18/2009	5520.83	38.34	NPP	25.61	5495.22	NPP
MW #45	5/7/2009	5506.36	16.92	11.38	11.68	5494.92	0.30
	5/18/2009	5506.36	16.92	NPP	11.71	5494.65	NPP
MW #46	5/7/2009	5504.65	10.39	NPP	NWP		NPP
	5/18/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	5/7/2009	5506.77	14.28	12.54	12.56	5494.23	0.02
	5/18/2009	5506.77	14.28	12.60	12.66	5494.16	0.06

NPP = No Product Present NWP = No Water Present

Observation Well Fluids Monitoring June 2009

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	6/1/2009	5506.62	12.26	NPP	11.51	5495.11	NPP
	6/18/2009	5506.62	12.26	NPP	11.55	5495.07	NPP
	6/29/2009	5506.62	12.26	NPP	11.67	5494.95	NPP
OW 1+50	6/1/2009	5508.03	14.36	13.55	13.95	5494.40	0.40
	6/18/2009	5508.03	14.36	13.54	14.04	5494.39	0.50
	6/29/2009	5508.03	14.36	13.69	14.14	5494.25	0.45
OW 3+85	6/1/2009	5507.31	15.06	NPP	13.10	5494.21	NPP
	6/18/2009	5507.31	15.06	NPP	13.13	5494.18	NPP
	6/29/2009	5507.31	15.06	NPP	13.23	5494.08	NPP
OW 5+50	6/1/2009	5507.59	13.67	NPP	13.43	5494.16	NPP
	6/18/2009	5507.59	13.67	NPP	13.42	5494.17	NPP
	6/29/2009	5507.59	13.67	NPP	13.47	5494.12	NPP
OW 6+70	6/1/2009	5504.78	14.67	NPP	NWP		NPP
	6/18/2009	5504.78	14.67	NPP	NWP		NPP
	6/29/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	6/1/2009	5506.53	15.99	NPP	NWP		NPP
	6/18/2009	5506.53	15.99	NPP	NWP		NPP
	6/29/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	6/1/2009	5506.70	16.59	NPP	12.38	5494.32	NPP
	6/18/2009	5506.70	16.59	NPP	12.35	5494.35	NPP
	6/29/2009	5506.70	16.59	NPP	12.37	5494.33	NPP

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring June 2009

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	6/1/2009	5508.14	12.96	NPP	NWP		NPP
	6/18/2009	5508.14	12.96	NPP	NWP		NPP
	6/29/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	6/1/2009	5508.43	15.21	NPP	12.81	5495.62	NPP
	6/18/2009	5508.43	15.21	NPP	12.90	5495.53	NPP
	6/29/2009	5508.43	15.21	NPP	12.93	5495.50	NPP
OW 19+50	6/1/2009	5508.03	13.00	NPP	12.76	5495.27	NPP
	6/18/2009	5508.03	13.00	NPP	12.92	5495.11	NPP
	6/29/2009	5508.03	13.00	NPP	NWP		NPP
OW 22+00	6/1/2009	5506.91	14.16	NPP	11.73	5495.18	NPP
	6/18/2009	5506.91	14.16	NPP	12.03	5494.88	NPP
	6/29/2009	5506.91	14.16	NPP	12.53	5494.38	NPP
OW 23+10	6/1/2009	5514.12	18.34	16.24	16.27	5497.87	0.03
	6/18/2009	5514.12	18.34	NPP	16.30	5497.82	NPP
	6/29/2009	5514.12	18.34	NPP	16.33	5497.79	NPP
OW 23+90	6/1/2009	5515.18	18.01	NPP	17.15	5498.03	NPP
	6/18/2009	5515.18	18.01	NPP	17.12	5498.06	NPP
	6/29/2009	5515.18	18.01	NPP	17.15	5498.03	NPP
OW 25+70	6/1/2009	5509.00	13.98	NPP	10.72	5498.28	NPP
	6/18/2009	5509.00	13.98	NPP	10.73	5498.27	NPP
	6/29/2009	5509.00	13.98	NPP	10.77	5498.23	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring June 2009

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	6/1/2009	5506.68	14.09	NPP	8.13	5498.55	NPP
	6/18/2009	5506.68	14.09	NPP	8.17	5498.51	NPP
	6/29/2009	5506.68	14.09	NPP	8.29	5498.39	NPP
CW 1+50	6/1/2009	5505.13	13.74	NPP	6.65	5498.48	NPP
	6/18/2009	5505.13	13.74	NPP	6.69	5498.44	NPP
	6/29/2009	5505.13	13.74	NPP	6.83	5498.30	NPP
CW 3+85	6/1/2009	5503.87	13.11	NPP	5.41	5498.46	NPP
	6/18/2009	5503.87	13.11	NPP	5.41	5498.46	NPP
	6/29/2009	5503.87	13.11	NPP	5.56	5498.31	NPP
CW 5+50	6/1/2009	5503.76	12.27	NPP	6.24	5497.52	NPP
	6/18/2009	5503.76	12.27	NPP	6.21	5497.55	NPP
	6/29/2009	5503.76	12.27	NPP	6.28	5497.48	NPP
CW 6+70	6/1/2009	5503.84	11.45	NPP	6.58	5497.26	NPP
	6/18/2009	5503.84	11.45	NPP	6.58	5497.26	NPP
	6/29/2009	5503.84	11.45	NPP	6.61	5497.23	NPP
CW 8+10	6/1/2009	5504.02	11.63	NPP	7.36	5496.66	NPP
	6/18/2009	5504.02	11.63	NPP	7.36	5496.66	NPP
	6/29/2009	5504.02	11.63	NPP	7.37	5496.65	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring June 2009

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	6/1/2009	5503.80	12.6	NPP	7.49	5496.31	NPP
	6/18/2009	5503.80	12.6	NPP	7.49	5496.31	NPP
	6/29/2009	5503.80	12.6	NPP	7.51	5496.29	NPP
CW 11+15	6/1/2009	5503.95	12.27	NPP	5.88	5498.07	NPP
	6/18/2009	5503.95	12.27	NPP	5.93	5498.02	NPP
	6/29/2009	5503.95	12.27	NPP	5.97	5497.98	NPP
CW 14+10	6/1/2009	5504.39	13.05	NPP	6.40	5497.99	NPP
	6/18/2009	5504.39	13.05	NPP	6.45	5497.94	NPP
	6/29/2009	5504.39	13.05	NPP	6.45	5497.94	NPP
CW 16+60	6/1/2009	5504.32	12.86	NPP	6.27	5498.05	NPP
	6/18/2009	5504.32	12.86	NPP	6.3	5498.02	NPP
	6/29/2009	5504.32	12.86	NPP	6.27	5498.05	NPP
CW 19+50	6/1/2009	5504.52	9.99	NPP	6.22	5498.30	NPP
	6/18/2009	5504.52	9.99	NPP	6.24	5498.28	NPP
	6/29/2009	5504.52	9.99	NPP	6.10	5498.42	NPP
CW 22+00	6/1/2009	5508.04	12.34	NPP	8.95	5499.09	NPP
	6/18/2009	5508.04	12.34	NPP	8.95	5499.09	NPP
	6/29/2009	5508.04	12.34	NPP	8.94	5499.10	NPP

NPP = No Product Present NWP = No Water Present

Collection Well Fluids Monitoring June 2009

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	6/1/2009	5510.04	14.65	NPP	10.61	5499.43	NPP
	6/18/2009	5510.04	14.65	NPP	10.6	5499.44	NPP
	6/29/2009	5510.04	14.65	NPP	10.58	5499.46	NPP
CW 23+90	6/1/2009	5507.32	11.72	NPP	8.08	5499.24	NPP
	6/18/2009	5507.32	11.72	NPP	8.04	5499.28	NPP
	6/29/2009	5507.32	11.72	NPP	8.00	5499.32	NPP
CW 25+95	6/1/2009	5505.90	12.25	NPP	7.13	5498.77	NPP
	6/18/2009	5505.90	12.25	NPP	7.12	5498.78	NPP
	6/29/2009	5505.90	12.25	NPP	7.21	5498.69	NPP

NPP = No Product Present NWP = No Water Present

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Monitoring Well Fluids Monitoring June 2009

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	6/1/2009	5510.31	22.94	NPP	10.9	5499.41	NPP
	6/18/2009	5510.31	22.94	NPP	11.08	5499.23	NPP
	6/29/2009	5510.31	22.94	NPP	11.24	5499.07	NPP
MW #12	6/1/2009	5501.61	14.98	NPP	10.50	5491.11	NPP
	6/18/2009	5501.61	14.98	NPP	10.67	5490.94	NPP
	6/29/2009	5501.61	14.98	NPP	10.88	5490.73	NPP
MW #20	6/1/2009	5519.90	27.13	20.62	21.15	5499.17	0.53
	6/18/2009	5519.90	27.13	20.63	21.18	5499.16	0.55
	6/29/2009	5519.90	27.13	20.64	21.21	5499.15	0.57
MW #21	6/1/2009	5521.99	30.38	21.75	21.85	5500.22	0.10
	6/18/2009	5521.99	30.38	21.75	21.83	5500.22	0.08
	6/29/2009	5521.99	30.38	21.74	21.84	5500.23	0.10
MW #39	6/1/2009	5520.83	38.34	NPP	25.61	5495.22	NPP
	6/18/2009	5520.83	38.34	NPP	25.64	5495.19	NPP
	6/29/2009	5520.83	38.34	NPP	25.71	5495.12	NPP
MW #45	6/1/2009	5506.36	16.92	NPP	11.64	5494.72	NPP
	6/18/2009	5506.36	16.92	NPP	11.67	5494.69	NPP
	6/29/2009	5506.36	16.92	NPP	11.70	5494.66	NPP

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring June 2009

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	6/1/2009	5504.65	10.39	NPP	NWP		NPP
	6/18/2009	5504.65	10.39	NPP	NWP		NPP
	6/29/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	6/1/2009	5506.77	14.28	NPP	12.56	5494.21	NPP
	6/18/2009	5506.77	14.28	NPP	12.60	5494.17	NPP
	6/29/2009	5506.77	14.28	NPP	12.68	5494.09	NPP

NPP = No Product Present NWP = No Water Present

Observation Well Fluids Monitoring July 2009

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	7/13/2009	5506.62	12.26	NPP	11.69	5494.93	NPP
	7/27/2009	5506.62	12.26	NPP	11.76	5494.86	NPP
OW 1+50	7/13/2009	5508.03	14.36	13.61	14.21	5494.30	0.60
	7/27/2009	5508.03	14.36	13.70	14.29	5494.21	0.59
OW 3+85	7/13/2009	5507.31	15.06	NPP	13.27	5494.04	NPP
	7/27/2009	5507.31	15.06	NPP	13.30	5494.01	NPP
OW 5+50	7/13/2009	5507.59	13.67	NPP	13.46	5494.13	NPP
	7/27/2009	5507.59	13.67	NPP	13.47	5494.12	NPP
OW 6+70	7/13/2009	5504.78	14.67	NPP	NWP		NPP
	7/27/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	7/13/2009	5506.53	15.99	NPP	NWP		NPP
	7/27/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	7/13/2009	5506.70	16.59	NPP	12.36	5494.34	NPP
	7/27/2009	5506.70	16.59	NPP	12.40	5494.30	NPP
OW 14+10	7/13/2009	5508.14	12.96	NPP	NWP		NPP
	7/27/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	7/13/2009	5508.43	15.21	NPP	12.91	5495.52	NPP
	7/27/2009	5508.43	15.21	NPP	12.95	5495.48	NPP

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring July 2009

Appendix A - Tab 7.0

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	7/13/2009	5508.03	13.00	NPP	NWP		NPP
	7/27/2009	5508.03	13.00	NPP	NWP		NPP
OW 22+00	7/13/2009	5506.91	14.16	NPP	12.47	5494.44	NPP
	7/27/2009	5506.91	14.16	NPP	12.60	5494.31	NPP
OW 23+10	7/13/2009	5514.12	18.34	16.25	16.32	5497.86	0.07
	7/27/2009	5514.12	18.34	NPP	16.32	5497.80	NPP
OW 23+90	7/13/2009	5515.18	18.01	NPP	17.1	5498.08	NPP
	7/27/2009	5515.18	18.01	NPP	17.14	5498.04	NPP
OW 25+70	7/13/2009	5509.00	13.98	NPP	10.72	5498.28	NPP
	7/27/2009	5509.00	13.98	NPP	10.74	5498.26	NPP

Collection Well Fluids Monitoring July 2009

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	7/13/2009	5506.68	14.09	NPP	8.31	5498.37	NPP
	7/27/2009	5506.68	14.09	NPP	8.39	5498.29	NPP
CW 1+50	7/13/2009	5505.13	13.74	NPP	6.83	5498.30	NPP
	7/27/2009	5505.13	13.74	NPP	6.90	5498.23	NPP
CW 3+85	7/13/2009	5503.87	13.11	NPP	5.58	5498.29	NPP
	7/27/2009	5503.87	13.11	NPP	6.68	5497.19	NPP
CW 5+50	7/13/2009	5503.76	12.27	NPP	6.31	5497.45	NPP
	7/27/2009	5503.76	12.27	NPP	6.35	5497.41	NPP
CW 6+70	7/13/2009	5503.84	11.45	NPP	6.62	5497.22	NPP
	7/27/2009	5503.84	11.45	NPP	6.67	5497.17	NPP
CW 8+10	7/13/2009	5504.02	11.63	NPP	7.40	5496.62	NPP
	7/27/2009	5504.02	11.63	NPP	7.44	5496.58	NPP
CW 8+45	7/13/2009	5503.80	12.6	NPP	7.52	5496.28	NPP
	7/27/2009	5503.80	12.6	NPP	7.57	5496.23	NPP
CW 11+15	7/13/2009	5503.95	12.27	NPP	5.94	5498.01	NPP
	7/27/2009	5503.95	12.27	NPP	5.96	5497.99	NPP
CW 14+10	7/13/2009	5504.39	13.05	NPP	6.36	5498.03	NPP
	7/27/2009	5504.39	13.05	NPP	6.43	5497.96	NPP

NPP = No Product Present NWP = No Water Present

Collection Well Fluids Monitoring July 2009

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	7/13/2009	5504.32	12.86	NPP	6.27	5498.05	NPP
	7/27/2009	5504.32	12.86	NPP	6.27	5498.05	NPP
CW 19+50	7/13/2009	5504.52	9.99	NPP	6.20	5498.32	NPP
	7/27/2009	5504.52	9.99	NPP	6.31	5498.21	NPP
CW 22+00	7/13/2009	5508.04	12.34	NPP	8.96	5499.08	NPP
	7/27/2009	5508.04	12.34	NPP	8.96	5499.08	NPP
CW 23+10	7/13/2009	5510.04	14.65	NPP	10.59	5499.45	NPP
	7/27/2009	5510.04	14.65	NPP	10.58	5499.46	NPP
CW 23 90	7/13/2009	5507.32	11.72	NPP	8.03	5499.29	NPP
	7/27/2009	5507.32	11.72	NPP	8.01	5499.31	NPP
CW 25+95	7/13/2009	5505.90	12.25	NPP	7.12	5498.78	NPP
	7/27/2009	5505.90	12.25	NPP	7.12	5498.78	NPP

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring July 2009

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	7/13/2009	5510.31	22.94	NPP	11.27	5499.04	NPP
	7/27/2009	5510.31	22.94	NPP	11.08	5499.23	NPP
MW #12	7/13/2009	5501.61	14.98	NPP	10.91	5490.70	NPP
	7/27/2009	5501.61	14.98	NPP	10.97	5490.64	NPP
MW #20	7/13/2009	5519.90	27.13	20.63	21.20	5499.16	0.57
	7/27/2009	5519.90	27.13	20.71	21.10	5499.11	0.39
MW #21	7/13/2009	5521.99	30.38	21.76	21.85	5500.21	0.09
	7/27/2009	5521.99	30.38	21.69	21.78	5500.28	0.09
MW #39	7/13/2009	5520.83	38.34	NPP	25.69	5495.14	NPP
	7/27/2009	5520.83	38.34	NPP	25.72	5495.11	NPP
MW #45	7/13/2009	5506.36	16.92	NPP	11.68	5494.68	NPP
	7/27/2009	5506.36	16.92	NPP	11.68	5494.68	NPP
MW #46	7/13/2009	5504.65	10.39	NPP	NWP		NPP
	7/27/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	7/13/2009	5506.77	14.28	NPP	12.67	5494.10	NPP
	7/27/2009	5506.77	14.28	NPP	12.72	5494.05	NPP

NPP = No Product Present NWP = No Water Present

Observation Well Fluids Monitoring August 2009

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	8/13/2009	5506.62	12.26	NPP	11.19	5495.43	NPP
	8/24/2009	5506.62	12.26	NPP	10.30	5496.32	NPP
OW 1+50	8/13/2009	5508.03	14.36	NPP	12.65	5495.38	NPP
	8/24/2009	5508.03	14.36	NPP	12.19	5495.84	NPP
OW 3+85	8/13/2009	5507.31	15.06	NPP	12.27	5495.04	NPP
	8/24/2009	5507.31	15.06	NPP	11.99	5495.32	NPP
OW 5+50	8/13/2009	5507.59	13.67	NPP	13.52	5494.07	NPP
	8/24/2009	5507.59	13.67	NPP	13.43	5494.16	NPP
OW 6+70	8/13/2009	5504.78	14.67	NPP	NWP		NPP
	8/24/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	8/13/2009	5506.53	15.99	NPP	NWP		NPP
	8/24/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	8/13/2009	5506.70	16.59	12.24	12.69	5494.37	0.45
	8/24/2009	5506.70	16.59	12.20	12.45	5494.45	0.25
OW 14+10	8/13/2009	5508.14	12.96	NPP	NWP		NPP
	8/24/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	8/13/2009	5508.43	15.21	NPP	12.78	5495.65	NPP
	8/24/2009	5508.43	15.21	NPP	12.50	5495.93	NPP

NPP = No Product Present   NWP = No Water Present

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Observation Well Fluids Monitoring August 2009

Appendix A - Tab 8.0

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	8/13/2009	5508.03	13.00	NPP	12.89	5495.14	NPP
	8/24/2009	5508.03	13.00	NPP	12.41	5495.62	NPP
OW 22+00	8/13/2009	5506.91	14.16	NPP	10.23	5496.68	NPP
	8/24/2009	5506.91	14.16	NPP	10.60	5496.31	NPP
OW 23+10	8/13/2009	5514.12	18.34	NPP	15.69	5498.43	NPP
	8/24/2009	5514.12	18.34	NPP	16.09	5498.03	NPP
OW 23+90	8/13/2009	5515.18	18.01	NPP	16.69	5498.49	NPP
	8/24/2009	5515.18	18.01	NPP	16.92	5498.26	NPP
OW 25+70	8/13/2009	5509.00	13.98	NPP	10.40	5498.60	NPP
	8/24/2009	5509.00	13.98	NPP	10.56	5498.44	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring August 2009

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	8/13/2009	5506.68	14.09	NPP	8.04	5498.64	NPP
	8/24/2009	5506.68	14.09	NPP	8.00	5498.68	NPP
CW 1+50	8/13/2009	5505.13	13.74	NPP	6.75	5498.38	NPP
	8/24/2009	5505.13	13.74	NPP	6.56	5498.57	NPP
CW 3+85	8/13/2009	5503.87	13.11	NPP	5.58	5498.29	NPP
	8/24/2009	5503.87	13.11	NPP	5.42	5498.45	NPP
CW 5+50	8/13/2009	5503.76	12.27	NPP	6.26	5497.50	NPP
	8/24/2009	5503.76	12.27	NPP	6.21	5497.55	NPP
CW 6+70	8/13/2009	5503.84	11.45	NPP	6.62	5497.22	NPP
	8/24/2009	5503.84	11.45	NPP	6.58	5497.26	NPP
CW 8+10	8/13/2009	5504.02	11.63	NPP	7.46	5496.56	NPP
	8/24/2009	5504.02	11.63	NPP	7.36	5496.66	NPP
CW 8+45	8/13/2009	5503.80	12.6	NPP	7.51	5496.29	NPP
	8/24/2009	5503.80	12.6	NPP	7.44	5496.36	NPP
CW 11+15	8/13/2009	5503.95	12.27	NPP	6.07	5497.88	NPP
	8/24/2009	5503.95	12.27	NPP	5.94	5498.01	NPP
CW 14+10	8/13/2009	5504.39	13.05	NPP	6.37	5498.02	NPP
	8/24/2009	5504.39	13.05	NPP	6.32	5498.07	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring August 2009

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	8/13/2009	5504.32	12.86	NPP	6.17	5498.15	NPP
	8/24/2009	5504.32	12.86	NPP	6.19	5498.13	NPP
CW 19+50	8/13/2009	5504.52	9.99	NPP	6.00	5498.52	NPP
	8/24/2009	5504.52	9.99	NPP	6.01	5498.51	NPP
CW 22+00	8/13/2009	5508.04	12.34	NPP	8.88	5499.16	NPP
	8/24/2009	5508.04	12.34	NPP	8.83	5499.21	NPP
CW 23+10	8/13/2009	5510.04	14.65	NPP	10.53	5499.51	NPP
	8/24/2009	5510.04	14.65	NPP	10.45	5499.59	NPP
CW 23+90	8/13/2009	5507.32	11.72	NPP	8.00	5499.32	NPP
	8/24/2009	5507.32	11.72	NPP	7.94	5499.38	NPP
CW 25+95	8/13/2009	5505.90	12.25	NPP	7.08	5498.82	NPP
	8/24/2009	5505.90	12.25	NPP	7.07	5498.83	NPP

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring August 2009

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	8/13/2009	5510.31	22.94	NPP	10.46	5499.85	NPP
	8/24/2009	5510.31	22.94	NPP	10.46	5499.85	NPP
MW #12	8/13/2009	5501.61	14.98	NPP	10.28	5491.33	NPP
	8/24/2009	5501.61	14.98	NPP	9.50	5492.11	NPP
MW #20	8/13/2009	5519.90	27.13	20.67	21.08	5499.15	0.41
	8/24/2009	5519.90	27.13	20.61	20.91	5499.23	0.30
MW #21	8/13/2009	5521.99	30.38	21.52	21.68	5500.44	0.16
	8/24/2009	5521.99	30.38	21.34	21.54	5500.61	0.20
MW #39	8/13/2009	5520.83	38.34	NPP	25.85	5494.98	NPP
	8/24/2009	5520.83	38.34	NPP	25.87	5494.96	NPP
MW #45	8/13/2009	5506.36	16.92	NPP	11.64	5494.72	NPP
	8/24/2009	5506.36	16.92	NPP	11.54	5494.82	NPP
MW #46	8/13/2009	5504.65	10.39	NPP	9.36	5495.29	NPP
	8/24/2009	5504.65	10.39	NPP	9.83	5494.82	NPP
MW #47	8/13/2009	5506.77	14.28	NPP	11.67	5495.10	NPP
	8/24/2009	5506.77	14.28	NPP	11.46	5495.31	NPP

NPP = No Product Present NWP = No Water Present

Observation Well Fluids Monitoring Sept. 2009

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	9/9/2009	5506.62	12.26	NPP	11.97	5494.65	NPP
	9/21/2009	5506.62	12.26	NPP	12	5494.62	NPP
OW 1+50	9/9/2009	5508.03	14.36	13.89	14.35	5494.05	0.46
	9/21/2009	5508.03	14.36	13.93	14.34	5494.02	0.41
OW 3+85	9/9/2009	5507.31	15.06	NPP	13.44	5493.87	NPP
	9/21/2009	5507.31	15.06	NPP	13.46	5493.85	NPP
OW 5+50	9/9/2009	5507.59	13.67	NPP	13.53	5494.06	NPP
	9/21/2009	5507.59	13.67	NPP	13.53	5494.06	NPP
OW 6+70	9/9/2009	5504.78	14.67	NPP	NWP		NPP
	9/21/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	9/9/2009	5506.53	15.99	NPP	NWP		NPP
	9/21/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	9/9/2009	5506.70	16.59	12.34	12.35	5494.36	0.01
	9/21/2009	5506.70	16.59	12.31	12.34	5494.38	0.03
OW 14+10	9/9/2009	5508.14	12.96	NPP	NWP		NPP
	9/21/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	9/9/2009	5508.43	15.21	NPP	13.03	5495.40	NPP
	9/21/2009	5508.43	15.21	NPP	13.13	5495.30	NPP

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring Sept. 2009

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	9/9/2009	5508.03	13.00	NPP	NWP		NPP
	9/21/2009	5508.03	13.00	NPP	NWP		NPP
OW 22+00	9/9/2009	5506.91	14.16	NPP	12.73	5494.18	NPP
	9/21/2009	5506.91	14.16	NPP	12.73	5494.18	NPP
OW 23+10	9/9/2009	5514.12	18.34	NPP	16.31	5497.81	NPP
	9/21/2009	5514.12	18.34	NPP	16.23	5497.89	NPP
OW 23+90	9/9/2009	5515.18	18.01	NPP	17.12	5498.06	NPP
	9/21/2009	5515.18	18.01	NPP	17.11	5498.07	NPP
OW 25+70	9/9/2009	5509.00	13.98	NPP	10.73	5498.27	NPP
	9/21/2009	5509.00	13.98	NPP	10.71	5498.29	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring Sept. 2009

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	9/9/2009	5506.68	14.09	NPP	8.40	5498.28	NPP
	9/21/2009	5506.68	14.09	NPP	8.43	5498.25	NPP
CW 1+50	9/9/2009	5505.13	13.74	NPP	6.78	5498.35	NPP
	9/21/2009	5505.13	13.74	NPP	6.89	5498.24	NPP
CW 3+85	9/9/2009	5503.87	13.11	NPP	5.49	5498.38	NPP
	9/21/2009	5503.87	13.11	NPP	5.64	5498.23	NPP
CW 5+50	9/9/2009	5503.76	12.27	NPP	6.30	5497.46	NPP
	9/21/2009	5503.76	12.27	NPP	6.33	5497.43	NPP
CW 6+70	9/9/2009	5503.84	11.45	NPP	6.68	5497.16	NPP
	9/21/2009	5503.84	11.45	NPP	6.68	5497.16	NPP
CW 8+10	9/9/2009	5504.02	11.63	NPP	7.45	5496.57	NPP
	9/21/2009	5504.02	11.63	NPP	7.48	5496.54	NPP
CW 8+45	9/9/2009	5503.80	12.6	NPP	7.55	5496.25	NPP
	9/21/2009	5503.80	12.6	NPP	7.55	5496.25	NPP
CW 11+15	9/9/2009	5503.95	12.27	NPP	5.97	5497.98	NPP
	9/21/2009	5503.95	12.27	NPP	6.00	5497.95	NPP
CW 14+10	9/9/2009	5504.39	13.05	NPP	6.41	5497.98	NPP
	9/21/2009	5504.39	13.05	NPP	6.44	5497.95	NPP

NPP = No Product Present NWP = No Water Present

Collection Well Fluids Monitoring Sept. 2009

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	9/9/2009	5504.32	12.86	NPP	6.25	5498.07	NPP
	9/21/2009	5504.32	12.86	NPP	6.27	5498.05	NPP
CW 19+50	9/9/2009	5504.52	9.99	NPP	5.78	5498.74	NPP
	9/21/2009	5504.52	9.99	NPP	5.80	5498.72	NPP
CW 22+00	9/9/2009	5508.04	12.34	NPP	8.89	5499.15	NPP
	9/21/2009	5508.04	12.34	NPP	8.88	5499.16	NPP
CW 23+10	9/9/2009	5510.04	14.65	NPP	10.50	5499.54	NPP
	9/21/2009	5510.04	14.65	NPP	10.50	5499.54	NPP
CW 23+90	9/9/2009	5507.32	11.72	NPP	7.94	5499.38	NPP
	9/21/2009	5507.32	11.72	NPP	7.95	5499.37	NPP
CW 25+95	9/9/2009	5505.90	12.25	NPP	7.08	5498.82	NPP
	9/21/2009	5505.90	12.25	NPP	7.08	5498.82	NPP

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring Sept. 2009

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	9/9/2009	5510.31	22.94	NPP	11.51	5498.80	NPP
	9/21/2009	5510.31	22.94	NPP	11.51	5498.80	NPP
MW #12	9/9/2009	5501.61	14.98	NPP	11.14	5490.47	NPP
	9/21/2009	5501.61	14.98	NPP	10.96	5490.65	NPP
MW #20	9/9/2009	5519.90	27.13	20.60	21.21	5499.18	0.61
	9/21/2009	5519.90	27.13	20.72	21.23	5499.08	0.51
MW #21	9/9/2009	5521.99	30.38	21.65	21.74	5500.32	0.09
	9/21/2009	5521.99	30.38	21.63	21.75	5500.34	0.12
MW #39	9/9/2009	5520.83	38.34	NPP	25.83	5495.00	NPP
	9/21/2009	5520.83	38.34	NPP	25.86	5494.97	NPP
MW #45	9/9/2009	5506.36	16.92	NPP	11.65	5494.71	NPP
	9/21/2009	5506.36	16.92	NPP	11.65	5494.71	NPP
MW #46	9/9/2009	5504.65	10.39	NPP	NWP		NPP
	9/21/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	9/9/2009	5506.77	14.28	12.84	13.18	5493.86	0.34
	9/21/2009	5506.77	14.28	12.72	13.26	5493.94	0.54

NPP = No Product Present NWP = No Water Present

Observation Well Fluids Monitoring Oct. 2009

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	10/5/2009	5506.62	12.26	NPP	12.02	5494.60	NPP
	10/19/2009	5506.62	12.26	NPP	12.00	5494.62	NPP
OW 1+50	10/5/2009	5508.03	14.36	14.01	14.36	5493.95	0.35
	10/19/2009	5508.03	14.36	13.97	14.36	5493.98	0.39
OW 3+85	10/5/2009	5507.31	15.06	13.51	13.53	5493.80	0.02
	10/19/2009	5507.31	15.06	13.52	13.54	5493.79	0.02
OW 5+50	10/5/2009	5507.59	13.67	NPP	13.56	5494.03	NPP
	10/19/2009	5507.59	13.67	NPP	13.60	5493.99	NPP
OW 6+70	10/5/2009	5504.78	14.67	NPP	NWP		NPP
	10/19/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	10/5/2009	5506.53	15.99	NPP	NWP		NPP
	10/19/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	10/5/2009	5506.70	16.59	NPP	12.34	5494.36	NPP
	10/19/2009	5506.70	16.59	12.40	12.42	5494.30	0.02
OW 14+10	10/5/2009	5508.14	12.96	NPP	NWP		NPP
	10/19/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	10/5/2009	5508.14	15.21	NPP	13.10	5495.04	NPP
	10/19/2009	5508.43	15.21	NPP	13.13	5495.30	NPP

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring Oct. 2009

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	10/5/2009	5508.03	13.00	NPP	NWP		NPP
	10/19/2009	5508.03	13.00	NPP	NWP		NPP
OW 22+ 00	10/5/2009	5506.91	14.16	NPP	12.62	5494.29	NPP
	10/19/2009	5506.91	14.16	NPP	12.61	5494.30	NPP
OW 23+ 10	10/5/2009	5514.12	18.34	NPP	16.27	5497.85	NPP
	10/19/2009	5514.12	18.34	NPP	16.23	5497.89	NPP
OW 23+ 90	10/5/2009	5515.18	18.01	NPP	17.11	5498.07	NPP
	10/19/2009	5515.18	18.01	NPP	17.06	5498.12	NPP
OW 25+ 70	10/5/2009	5509.00	13.98	NPP	10.72	5498.28	NPP
	10/19/2009	5509.00	13.98	NPP	10.70	5498.30	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring Oct. 2009

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	10/5/2009	5506.68	14.09	NPP	8.5	5498.18	NPP
	10/19/2009	5506.68	14.09	NPP	8.59	5498.09	NPP
CW 1+50	10/5/2009	5505.13	13.74	NPP	7.00	5498.13	NPP
	10/19/2009	5505.13	13.74	NPP	7.01	5498.12	NPP
CW 3+85	10/5/2009	5503.87	13.11	NPP	5.75	5498.12	NPP
	10/19/2009	5503.87	13.11	NPP	5.75	5498.12	NPP
CW 5+50	10/5/2009	5503.76	12.27	NPP	6.34	5497.42	NPP
	10/19/2009	5503.76	12.27	NPP	6.39	5497.37	NPP
CW 6+70	10/5/2009	5503.84	11.45	NPP	6.69	5497.15	NPP
	10/19/2009	5503.84	11.45	NPP	6.70	5497.14	NPP
CW 8+10	10/5/2009	5504.02	11.63	NPP	7.48	5496.54	NPP
	10/19/2009	5504.02	11.63	NPP	7.56	5496.46	NPP
CW 8+45	10/5/2009	5503.80	12.6	NPP	7.53	5496.27	NPP
	10/19/2009	5503.80	12.6	NPP	7.64	5496.16	NPP
CW 11+15	10/5/2009	5503.95	12.27	NPP	5.59	5498.36	NPP
	10/19/2009	5503.95	12.27	NPP	5.96	5497.99	NPP
CW 14+10	10/5/2009	5504.39	13.05	NPP	6.37	5498.02	NPP
	10/19/2009	5504.39	13.05	NPP	6.44	5497.95	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring Oct. 2009

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	10/5/2009	5504.32	12.86	NPP	6.22	5498.10	NPP
	10/19/2009	5504.32	12.86	NPP	6.28	5498.04	NPP
CW 19+50	10/5/2009	5504.52	9.99	NPP	5.72	5498.80	NPP
	10/19/2009	5504.52	9.99	NPP	6.11	5498.41	NPP
CW 22+00	10/5/2009	5508.04	12.34	NPP	8.91	5499.13	NPP
	10/19/2009	5508.04	12.34	NPP	8.91	5499.13	NPP
CW 23+10	10/5/2009	5510.04	14.65	NPP	10.5	5499.54	NPP
	10/19/2009	5510.04	14.65	NPP	10.53	5499.51	NPP
CW 23+90	10/5/2009	5507.32	11.72	NPP	7.95	5499.37	NPP
	10/19/2009	5507.32	11.72	NPP	7.99	5499.33	NPP
CW 25+95	10/5/2009	5505.90	12.25	NPP	7.08	5498.82	NPP
	10/19/2009	5505.90	12.25	NPP	7.10	5498.80	NPP

NPP = No Product Present   NWP = No Water Present

Monitoring Well Fluids Monitoring Oct. 2009

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	10/5/2009	5510.31	22.94	NPP	11.53	5498.78	NPP
	10/19/2009	5510.31	22.94	NPP	11.38	5498.93	NPP
MW #12	10/5/2009	5501.61	14.98	NPP	10.79	5490.82	NPP
	10/19/2009	5501.61	14.98	NPP	10.54	5491.07	NPP
MW #20	10/5/2009	5519.90	27.13	20.58	21.17	5499.20	0.59
	10/19/2009	5519.90	27.13	20.60	21.25	5499.17	0.65
MW #21	10/5/2009	5521.99	30.38	21.70	21.8	5500.27	0.10
	10/19/2009	5521.99	30.38	21.67	21.78	5500.30	0.11
MW #39	10/5/2009	5520.83	38.34	NPP	25.83	5495.00	NPP
	10/19/2009	5520.83	38.34	NPP	25.87	5494.96	NPP
MW #45	10/5/2009	5506.36	16.92	NPP	11.61	5494.75	NPP
	10/19/2009	5506.36	16.92	NPP	11.67	5494.69	NPP
MW #46	10/5/2009	5504.65	10.39	NPP	NWP		NPP
	10/19/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	10/5/2009	5506.77	14.28	12.71	13.35	5493.93	0.64
	10/19/2009	5506.77	14.28	12.71	13.45	5493.91	0.74

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring November 2009

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	11/2/2009	5506.62	12.26	NPP	12.02	5494.60	NPP
	11/16/2009	5506.62	12.26	NPP	12.07	5494.55	NPP
	11/30/2009	5506.62	12.26	NPP	12.09	5494.53	NPP
OW 1+50	11/2/2009	5508.03	14.36	14.03	14.35	5493.94	0.32
	11/16/2009	5508.03	14.36	14.01	14.35	5493.95	0.34
	11/30/2009	5508.03	14.36	14.00	14.35	5493.96	0.35
OW 3+85	11/2/2009	5507.31	15.06	NPP	13.55	13.59	NPP
	11/16/2009	5507.31	15.06	13.59	13.69	5493.70	0.10
	11/30/2009	5507.31	15.06	13.58	13.72	5493.70	0.14
OW 5+50	11/2/2009	5507.59	13.67	NPP	13.63	5493.96	NPP
	11/16/2009	5507.59	13.67	NPP	13.68	5493.91	NPP
	11/30/2009	5507.59	13.67	NPP	13.68	5493.91	NPP
OW 6+70	11/2/2009	5504.78	14.67	NPP	NWP		NPP
	11/16/2009	5504.78	14.67	NPP	NWP		NPP
	11/30/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	11/2/2009	5506.53	15.99	NPP	NWP		NPP
	11/16/2009	5506.53	15.99	NPP	NWP		NPP
	11/30/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	11/2/2009	5506.70	16.59	12.42	12.46	5494.27	0.04
	11/16/2009	5506.70	16.59	12.46	12.47	5494.24	0.01
	11/30/2009	5506.70	16.59	12.45	12.47	5494.25	0.02

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring November 2009

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	11/2/2009	5508.14	12.96	NPP	NWP		NPP
	11/16/2009	5508.14	12.96	NPP	NWP		NPP
	11/30/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	11/2/2009	5508.43	15.21	NPP	13.18	5495.25	NPP
	11/16/2009	5508.43	15.21	NPP	13.21	5495.22	NPP
	11/30/2009	5508.43	15.21	NPP	13.13	5495.30	NPP
OW 19+50	11/2/2009	5508.03	13.00	NPP	NWP		NPP
	11/16/2009	5508.03	13.00	NPP	NWP		NPP
	11/30/2009	5508.03	13.00	NPP	NWP		NPP
OW 22+00	11/2/2009	5506.91	14.16	NPP	12.55	5494.36	NPP
	11/16/2009	5506.91	14.16	NPP	12.47	5494.44	NPP
	11/30/2009	5506.91	14.16	NPP	12.42	5494.49	NPP
OW 23+10	11/2/2009	5514.12	18.34	NPP	16.24	5497.88	NPP
	11/16/2009	5514.12	18.34	NPP	16.27	5497.85	NPP
	11/30/2009	5514.12	18.34	NPP	16.25	5497.87	NPP
OW 23+90	11/2/2009	5515.18	18.01	NPP	17.09	5498.09	NPP
	11/16/2009	5515.18	18.01	NPP	17.12	5498.06	NPP
	11/30/2009	5515.18	18.01	NPP	17.11	5498.07	NPP
OW 25+70	11/2/2009	5509.00	13.98	NPP	10.73	5498.27	NPP
	11/16/2009	5509.00	13.98	NPP	10.72	5498.28	NPP
	11/30/2009	5509.00	13.98	NPP	10.73	5498.27	NPP

NPP = No Product Present NWP = No Water Present

Collection Well Fluids Monitoring   November 2009

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	11/2/2009	5506.68	14.09	NPP	8.57	5498.11	NPP
	11/16/2009	5506.68	14.09	NPP	8.65	5498.03	NPP
	11/30/2009	5506.68	14.09	NPP	8.71	5497.97	NPP
CW 1+50	11/2/2009	5505.13	13.74	NPP	7.00	5498.13	NPP
	11/16/2009	5505.13	13.74	NPP	7.11	5498.02	NPP
	11/30/2009	5505.13	13.74	NPP	7.10	5498.03	NPP
CW 3+85	11/2/2009	5503.87	13.11	NPP	5.74	5498.13	NPP
	11/16/2009	5503.87	13.11	NPP	5.82	5498.05	NPP
	11/30/2009	5503.87	13.11	NPP	5.82	5498.05	NPP
CW 5+50	11/2/2009	5503.76	12.27	NPP	6.43	5497.33	NPP
	11/16/2009	5503.76	12.27	NPP	6.45	5497.31	NPP
	11/30/2009	5503.76	12.27	NPP	6.45	5497.31	NPP
CW 6+70	11/2/2009	5503.84	11.45	NPP	6.76	5497.08	NPP
	11/16/2009	5503.84	11.45	NPP	6.78	5497.06	NPP
	11/30/2009	5503.84	11.45	NPP	6.80	5497.04	NPP
CW 8+10	11/2/2009	5504.02	11.63	NPP	7.64	5496.38	NPP
	11/16/2009	5504.02	11.63	NPP	7.65	5496.37	NPP
	11/30/2009	5504.02	11.63	NPP	7.67	5496.35	NPP

NPP = No Product Present   NWP = No Water Present

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Collection Well Fluids Monitoring   November 2009

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	11/2/2009	5503.80	12.6	NPP	7.77	5496.03	NPP
	11/16/2009	5503.80	12.6	NPP	7.77	5496.03	NPP
	11/30/2009	5503.80	12.6	NPP	7.79	5496.01	NPP
CW 11+15	11/2/2009	5503.95	12.27	NPP	5.98	5497.97	NPP
	11/16/2009	5503.95	12.27	NPP	6.02	5497.93	NPP
	11/30/2009	5503.95	12.27	NPP	5.93	5498.02	NPP
CW 14+10	11/2/2009	5504.39	13.05	NPP	6.54	5497.85	NPP
	11/16/2009	5504.39	13.05	NPP	6.58	5497.81	NPP
	11/30/2009	5504.39	13.05	NPP	6.50	5497.89	NPP
CW 16+ 60	11/2/2009	5504.32	12.86	NPP	6.35	5497.97	NPP
	11/16/2009	5504.32	12.86	NPP	6.38	5497.94	NPP
	11/30/2009	5504.32	12.86	NPP	6.37	5497.95	NPP
CW 19+ 50	11/2/2009	5504.52	9.99	NPP	6.47	5498.05	NPP
	11/16/2009	5504.52	9.99	NPP	6.55	5497.97	NPP
	11/30/2009	5504.52	9.99	NPP	6.53	5497.99	NPP
CW 22+ 00	11/2/2009	5508.04	12.34	NPP	8.96	5499.08	NPP
	11/16/2009	5508.04	12.34	NPP	8.96	5499.08	NPP
	11/30/2009	5508.04	12.34	NPP	8.93	5499.11	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring November 2009

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	11/1/2009	5510.04	14.65	NPP	10.56	5499.48	NPP
	11/16/2009	5510.04	14.65	NPP	10.6	5499.44	NPP
	11/30/2009	5510.04	14.65	NPP	10.57	5499.47	NPP
CW 23+90	11/1/2009	5507.32	11.72	NPP	8.04	5499.28	NPP
	11/16/2009	5507.32	11.72	NPP	8.05	5499.27	NPP
	11/30/2009	5507.32	11.72	NPP	8.02	5499.30	NPP
CW 25+95	11/1/2009	5505.90	12.25	NPP	7.10	5498.80	NPP
	11/16/2009	5505.90	12.25	NPP	7.12	5498.78	NPP
	11/30/2009	5505.90	12.25	NPP	7.12	5498.78	NPP

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring November 2009

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	11/2/2009	5510.31	22.94	NPP	11.43	5498.88	NPP
	11/16/2009	5510.31	22.94	NPP	11.51	5498.80	NPP
	11/30/2009	5510.31	22.94	NPP	11.52	5498.79	NPP
MW #12	11/2/2009	5501.61	14.98	NPP	10.45	5491.16	NPP
	11/16/2009	5501.61	14.98	NPP	10.29	5491.32	NPP
	11/30/2009	5501.61	14.98	NPP	10.28	5491.33	NPP
MW #20	11/2/2009	5519.90	27.13	20.63	21.32	5499.13	0.69
	11/16/2009	5519.90	27.13	20.62	21.34	5499.14	0.72
	11/30/2009	5519.90	27.13	20.61	21.35	5499.14	0.74
MW #21	11/2/2009	5521.99	30.38	21.70	21.84	5500.26	0.14
	11/16/2009	5521.99	30.38	21.72	21.84	5500.25	0.12
	11/30/2009	5521.99	30.38	21.74	21.84	5500.23	0.10
MW #39	11/2/2009	5520.83	38.34	NPP	25.75	5495.08	NPP
	11/16/2009	5520.83	38.34	NPP	25.79	5495.04	NPP
	11/30/2009	5520.83	38.34	NPP	25.77	5495.06	NPP
MW #45	11/2/2009	5506.36	16.92	NPP	11.75	5494.61	NPP
	11/16/2009	5506.36	16.92	11.75	11.76	5494.61	0.01
	11/30/2009	5506.36	16.92	11.71	11.72	5494.65	0.01

NPP = No Product Present NWP = No Water Present

Monitoring Well Fluids Monitoring November 2009

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	11/2/2009	5504.65	10.39	NPP	NWP		NPP
	11/16/2009	5504.65	10.39	NPP	NWP		NPP
	11/30/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	11/2/2009	5506.77	14.28	NPP	13.45	5493.32	NPP
	11/16/2009	5506.77	14.28	12.77	13.45	5493.86	0.68
	11/30/2009	5506.77	14.28	12.83	13.43	5493.82	0.60

NPP = No Product Present NWP = No Water Present

Observation Well Fluids Monitoring Dec. 2009

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	12/14/2009	5506.62	12.26	NPP	12.11	5494.51	NPP
	12/28/2009	5506.62	12.26	NPP	12.18	5494.44	NPP
OW 1+50	12/14/2009	5508.03	14.36	14.01	14.36	5493.95	0.35
	12/28/2009	5508.03	14.36	14.08	14.36	5493.89	0.28
OW 3+85	12/14/2009	5507.31	15.06	13.57	13.78	5493.70	0.21
	12/28/2009	5507.31	15.06	13.66	13.79	5493.62	0.13
OW 5+50	12/14/2009	5507.59	13.67	13.63	13.66	5493.95	0.03
	12/28/2009	5507.59	13.67	13.61	13.62	5493.98	0.01
OW 6+70	12/14/2009	5504.78	14.67	NPP	NWP		NPP
	12/28/2009	5504.78	14.67	NPP	NWP		NPP
OW 8+10	12/14/2009	5506.53	15.99	NPP	NWP		NPP
	12/28/2009	5506.53	15.99	NPP	NWP		NPP
OW 11+15	12/14/2009	5506.70	16.59	12.55	12.56	5494.15	0.01
	12/28/2009	5506.70	16.59	12.56	12.58	5494.14	0.02
OW 14+10	12/14/2009	5508.14	12.96	NPP	NWP		NPP
	12/28/2009	5508.14	12.96	NPP	NWP		NPP
OW 16+60	12/14/2009	5508.43	15.21	NPP	13.04	5495.39	NPP
	12/28/2009	5508.43	15.21	NPP	13.08	5495.35	NPP

NPP = No Product Present   NWP = No Water Present

Observation Well Fluids Monitoring Dec. 2009

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	12/14/2009	5508.03	13.00	NPP	NWP		NPP
	12/28/2009	5508.03	13.00	NPP	NWP		NPP
OW 22+00	12/14/2009	5506.91	14.16	NPP	12.42	5494.49	NPP
	12/28/2009	5506.91	14.16	NPP	12.45	5494.46	NPP
OW 23+10	12/14/2009	5514.12	18.34	NPP	16.25	5497.87	NPP
	12/28/2009	5514.12	18.34	NPP	16.24	5497.88	NPP
OW 23+90	12/14/2009	5515.18	18.01	NPP	17.08	5498.10	NPP
	12/28/2009	5515.18	18.01	NPP	17.12	5498.06	NPP
OW 25+70	12/14/2009	5509.00	13.98	NPP	10.71	5498.29	NPP
	12/28/2009	5509.00	13.98	NPP	10.74	5498.26	NPP

NPP = No Product Present   NWP = No Water Present

Collection Well Fluids Monitoring Dec. 2009

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	12/14/2009	5506.68	14.09	NPP	8.84	5497.84	NPP
	12/28/2009	5506.68	14.09	NPP	8.89	5497.79	NPP
CW 1+50	12/14/2009	5505.13	13.74	NPP	7.22	5497.91	NPP
	12/28/2009	5505.13	13.74	NPP	7.29	5497.84	NPP
CW 3+85	12/14/2009	5503.87	13.11	NPP	5.84	5498.03	NPP
	12/28/2009	5503.87	13.11	NPP	5.92	5497.95	NPP
CW 5+50	12/14/2009	5503.76	12.27	NPP	6.53	5497.23	NPP
	12/28/2009	5503.76	12.27	NPP	6.48	5497.28	NPP
CW 6+70	12/14/2009	5503.84	11.45	NPP	6.89	5496.95	NPP
	12/28/2009	5503.84	11.45	NPP	6.91	5496.93	NPP
CW 8+10	12/14/2009	5504.02	11.63	NPP	7.80	5496.22	NPP
	12/28/2009	5504.02	11.63	NPP	7.87	5496.15	NPP
CW 8+45	12/14/2009	5503.80	12.6	NPP	8.91	5494.89	NPP
	12/28/2009	5503.80	12.6	NPP	8.02	5495.78	NPP
CW 11+15	12/14/2009	5503.95	12.27	NPP	6.04	5497.91	NPP
	12/28/2009	5503.95	12.27	NPP	6.06	5497.89	NPP
CW 14+10	12/14/2009	5504.39	13.05	NPP	6.68	5497.71	NPP
	12/28/2009	5504.39	13.05	NPP	6.65	5497.74	NPP

NPP = No Product Present NWP = No Water Present

Collection Well Fluids Monitoring Dec. 2009

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	6.48	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
CW 16+60	12/14/2009	5504.32	12.86	NPP	6.48	5497.84	NPP
	12/28/2009	5504.32	12.86	NPP	6.39	5497.93	NPP
CW 19+50	12/14/2009	5504.52	9.99	NPP	6.64	5497.88	NPP
	12/28/2009	5504.52	9.99	NPP	6.68	5497.84	NPP
CW 22+00	12/14/2009	5508.04	12.34	NPP	8.96	5499.08	NPP
	12/28/2009	5508.04	12.34	NPP	9.00	5499.04	NPP
CW 23+10	12/14/2009	5510.04	14.65	NPP	10.58	5499.46	NPP
	12/28/2009	5510.04	14.65	NPP	10.61	5499.43	NPP
CW 23+90	12/14/2009	5507.32	11.72	NPP	8.05	5499.27	NPP
	12/28/2009	5507.32	11.72	NPP	8.06	5499.26	NPP
CW 25+95	12/14/2009	5505.90	12.25	NPP	7.12	5498.78	NPP
	12/28/2009	5505.90	12.25	NPP	7.15	5498.75	NPP

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Monitoring Well Fluids Monitoring Dec. 2009

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	12/14/2009	5510.31	22.94	NPP	11.57	5498.74	NPP
	12/28/2009	5510.31	22.94	NPP	13.6	5496.71	NPP
MW #12	12/14/2009	5501.61	14.98	NPP	10.26	5491.35	NPP
	12/28/2009	5501.61	14.98	NPP	10.18	5491.43	NPP
MW #20	12/14/2009	5519.90	27.13	20.57	20.62	21.34	0.05
	12/28/2009	5519.90	27.13	20.65	21.38	5499.10	0.73
MW #21	12/14/2009	5521.99	30.38	21.75	21.86	5500.22	0.11
	12/28/2009	5521.99	30.38	21.79	21.89	5500.18	0.10
MW #39	12/14/2009	5520.83	38.34	NPP	25.68	5495.15	NPP
	12/28/2009	5520.83	38.34	NPP	25.72	5495.11	NPP
MW #45	12/14/2009	5506.36	16.92	11.82	11.86	5494.53	0.04
	12/28/2009	5506.36	16.92	11.90	11.96	5494.45	0.06
MW #46	12/14/2009	5504.65	10.39	NPP	NWP		NPP
	12/28/2009	5504.65	10.39	NPP	NWP		NPP
MW #47	12/14/2009	5506.77	14.28	12.79	13.45	5493.85	0.66
	12/28/2009	5506.77	14.28	13.80	13.94	5492.94	0.14

NPP = No Product Present NWP = No Water Present

Collection Wells

Groundwater Analysis & Field Data

		EPA Method 8260B					EPA Method 8015B	Field Data			
WQCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene) USEPA Regional Screening Levels (April 2009)-MTBE		Benzene	Toluene	Ethylben	Xylene	MTBE	DRO TPH Screening Guidelines Table 2a	E.C.	pH	Temp	TDS
	Date Sampled	0.005 (mg/L)	0.75 (mg/L)	0.70 (mg/L.)	0.62 (mg/L.)	0.012 (mg/L)	0.20 (mg/L.)	mmhos/cm	6.0-9.0	Farenheit	1000 (mg/l)
CW 0+60	Aug-09	0.045	<0.001	0.0038	<0.003	<0.001	4.1	1240	6.89	67.5	863
	Apr-09	0.034	<0.001	0.036	<0.003	<0.001	5.6	1231	6.93	53.7	867
	Aug-08	0.047	<0.001	0.0066	<0.002	<0.001	<1.0	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
CW 25+95	Aug-09	<0.001	<0.001	<0.001	<0.003	0.0011	<1.0	1215	6.93	65.7	846
	Apr-09	0.340	<0.001	0.0016	<0.003	0.0036	<1.0	1823	6.84	57.2	1313
	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

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Observation Wells — Groundwater Analysis & Field Data

		EPA Method 8260B					EPA Method 8015B		Field Data			
WQCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene) USEPA Regional Screening Levels (April 2009)-MTBE		Benzene	Toluene	Ethylben	Xylene	MTBE	DRO (TPH Screening Guidelines Table 2a)	GRO	E.C.	pH	Temp	TDS
	Date Sampled	0.005 (mg/L)	0.75 (mg/L)	0.70 (mg/L.)	0.62 (mg/L.)	0.012 (mg/L)	0.20 (mg/L.)	mg/L	mmhos/cm	6.0-9.0	Farenheit	1000 (mg/l)
OW 0+60	Aug-09	<0.001	<0.001	<0.001	<0.003	<0.001	47	7.4	1610	6.88	69	1136
	Apr-09	<0.001	<0.001	0.0019	<0.003	<0.001	14.0	1.1	1652	6.87	57.3	1183
	Aug-08	<0.001	<0.001	0.0066	0.019	<0.001	6.4	2.3	1577	6.91	69.2	1129
	Apr-08	<0.01	<0.01	0.018	0.048	<0.01	360.0	6.7	1727	6.78	56.2	1257
OW 1+50	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	0.076	<0.01	0.95	6.7	<0.01	2.9	24.0	1562	6.91	69.6	1116
	Apr-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
OW 3+85	Aug-09	0.009	<0.01	0.21	0.67	<0.01	28.0	3.9	3195	6.84	68.7	2397
	Apr-09	0.0078	<0.001	0.22	0.86	<0.001	40	5.1	2865	6.84	55.8	2153
	Aug-08	0.099	<0.01	0.95	3.2	<0.01	12.0	14.0	2835	6.87	67.1	2142
	Apr-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
OW 5+50	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NR[2]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[2]	NR[1]	NR[1]	NR[1]	NR[1]
OW 6+70	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NR[2]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NR[2]	NS[1]	NS[1]	NS[1]	NS[1]

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North Barrier Wall

Observation Wells

Groundwater Analysis & Field Data

		EPA Method 8260B					EPA Method 8015B		Field Data			
WQCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene) USEPA Regional Screening Levels (April 2009)-MTBE		Benzene	Toluene	Ethylben	Xylene	MTBE	DRO TPH Screening Guidelines Table 2a	GRO	E.C.	pH	Temp	TDS
	Date Sampled	0.005 (mg/L)	0.75 (mg/L)	0.70 (mg/L.)	0.62 (mg/L.)	0.012 (mg/L)	0.20 (mg/L.)	mg/L	mmhos/cm	6.0-9.0	Farenheit	1000 (mg/l)
OW 8+10	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NR[2]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NR[2]	NS[1]	NS[1]	NS[1]	NS[1]
OW 11+15	Aug-09	0.33	<0.01	0.033	<0.03	1.7	60	3.2	1940	6.82	65.1	1393
	Apr-09	0.23	<0.001	0.034	0.015	1.1	100	2.7	1921	6.82	57.6	1391
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
OW 14+10	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NR[2]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NR[2]	NS[1]	NS[1]	NS[1]	NS[1]
OW 16+60	Aug-09	0.75	<0.01	0.24	0.24	2.00	62	14.0	2653	6.82	69.6	1952
	Apr-09	0.40	<0.005	0.47	0.17	2.20	36.0	7.5	2655	6.77	62.2	1972
	Aug-08	1.20	<0.01	1.10	0.98	3.90	7.7	17.0	2544	6.91	71.9	1900
	Apr-08	2.30	<0.05	1.40	1.30	4.50	34.0	21.0	2474	6.78	61.1	1865
OW 19+50	Aug-09	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-09	<0.001	<0.001	<0.001	0.0034	0.042	12	0.11	3678	6.77	59.8	2824
	Aug-08	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]	NS[1]
	Apr-08	<0.002	<0.002	<0.002	<0.006	0.14	8.8	<0.25	3937	6.79	57.8	3112

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Observation Wells — Groundwater Analysis & Field Data

		EPA Method 8260B					EPA Method 8015B		Field Data			
WQCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene) USEPA Regional Screening Levels (April 2009)-MTBE		Benzene	Toluene	Ethylben	Xylene	MTBE	DRO TPH Screening Guidelines Table 2a	GRO	E.C.	pH	Temp	TDS
	Date Sampled	0.005 (mg/L)	0.75 (mg/L)	0.70 (mg/L.)	0.62 (mg/L.)	0.012 (mg/L)	0.20 (mg/L.)	mg/L	mmhos/cm	6.0-9.0	Farenheit	1000 (mg/l)
OW 22+00	Aug-09	<0.001	<0.001	<0.001	<0.003	0.69	1.5	0.11	3601	6.82	66.2	2742
	Apr-09	<0.001	<0.001	<0.001	<0.003	0.034	4.6	0.059	2942	6.8	56.3	2213
	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
OW 23+10	Aug-09	<0.001	<0.001	<0.001	<0.003	0.0078	2.5	0.28	1756	6.8	66.8	1250
	Apr-09	<0.001	<0.001	<0.001	<0.003	0.006	22.0	0.33	1535	6.86	59.4	1115
	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
OW 23+90	Aug-09	<0.001	<0.001	<0.001	<0.003	0.0013	<1.0	0.26	1659	6.83	64.8	1178
	Apr-09	<0.001	<0.001	<0.001	<0.003	<0.001	1.6	0.16	1401	6.8.5	60.1	989
	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
OW 25+70	Aug-09	<0.001	<0.001	<0.001	<0.003	<0.001	<1.0	<0.05	1204	6.85	68.1	837
	Apr-09	0.31	<0.001	0.009	<0.003	0.0014	<1.0	0.6	1450	6.85	55.8	1025
	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

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Monitoring Wells — Groundwater Analysis & Field Data

		EPA Method 8260B					EPA Method 8015B	Field Data			
WQCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene) USEPA Regional Screening Levels (April 2009)-MTBE		Benzene	Toluene	Ethylben	Xylene	MTBE	DRO (TPH Screening Guidelines Table 2a)	E.C.	pH	Temp	TDS
	Date Sampled	0.005 (mg/L)	0.75 (mg/L)	0.70 (mg/L.)	0.62 (mg/L.)	0.012 (mg/L)	0.20 (mg/L.)	mmhos/cm	6.0-9.0	Farenheit	1000 (mg/l)
MW - #11	Aug-09	0.099	<0.001	0.004	<0.0015	0.014	12	2619	6.96	64.4	1929
	Apr-09	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
	Aug-08	0.0038	<0.001	0.0022	<0.0015	0.019	9.6	2226	7.02	66.7	1655
	Apr-08	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]	NS[2]
MW - #12	Aug-09	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	1763	6.93	62.5	1256
	Apr-09	<0.001	<0.001	<0.001	<0.002	<0.001	<1.0	1346	7.06	50.3	946
	Aug-08	<0.001	<0.001	<0.001	<0.0015	<0.001	<1.0	775	7.10	62.6	541
	Apr-08	<0.001	<0.001	<0.001	<0.003	<0.0015	<1.0	707	6.84	51.1	495
MW - #20	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
MW - #21	Aug-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-09	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Aug-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]
	Apr-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]

NS[1]= Well is Dry or Not Enough Water to Sample- No Sample

NS[2] = Not Sampled due to approved Facility-Wide Monitoring Plan

NS[3] = Sample Inadvertently not Analyzed this Sampling Event

NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

NR[2] = No Sample Required per OCD and NMED pre-2007 Conditions

North Barrier Wall

Appendix A - Tab15.0

Monitoring Wells — Groundwater Analysis & Field Data

		EPA Method 8260B					EPA Method 8015B	Field Data			
WQCC 20 NMAC 6.2.3103 40CFR141.61 (Benzene and Ethylbenzene) USEPA Regional Screening Levels (April 2009)-MTBE		Benzene	Toluene	Ethylben	Xylene	MTBE	DRO TPH Screening Guidelines Table 2a	E.C.	pH	Temp	TDS
	Date Sampled	0.005 (mg/L)	0.75 (mg/L)	0.70 (mg/L.)	0.62 (mg/L.)	0.012 (mg/L)	0.20 (mg/L.)	mmhos/cm	6.0-9.0	Farenheit	1000 (mg/l)
MW #39	Aug-09	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Apr-09	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Apr-08	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
MW #45	Aug-09	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Apr-09	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Aug-08	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
	Apr-08	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²	NS²
MW #46	Aug-09	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Apr-09	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Aug-08	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
	Apr-08	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹	NS¹
MW #47	Aug-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Apr-09	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Aug-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹
	Apr-08	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹	NR¹

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

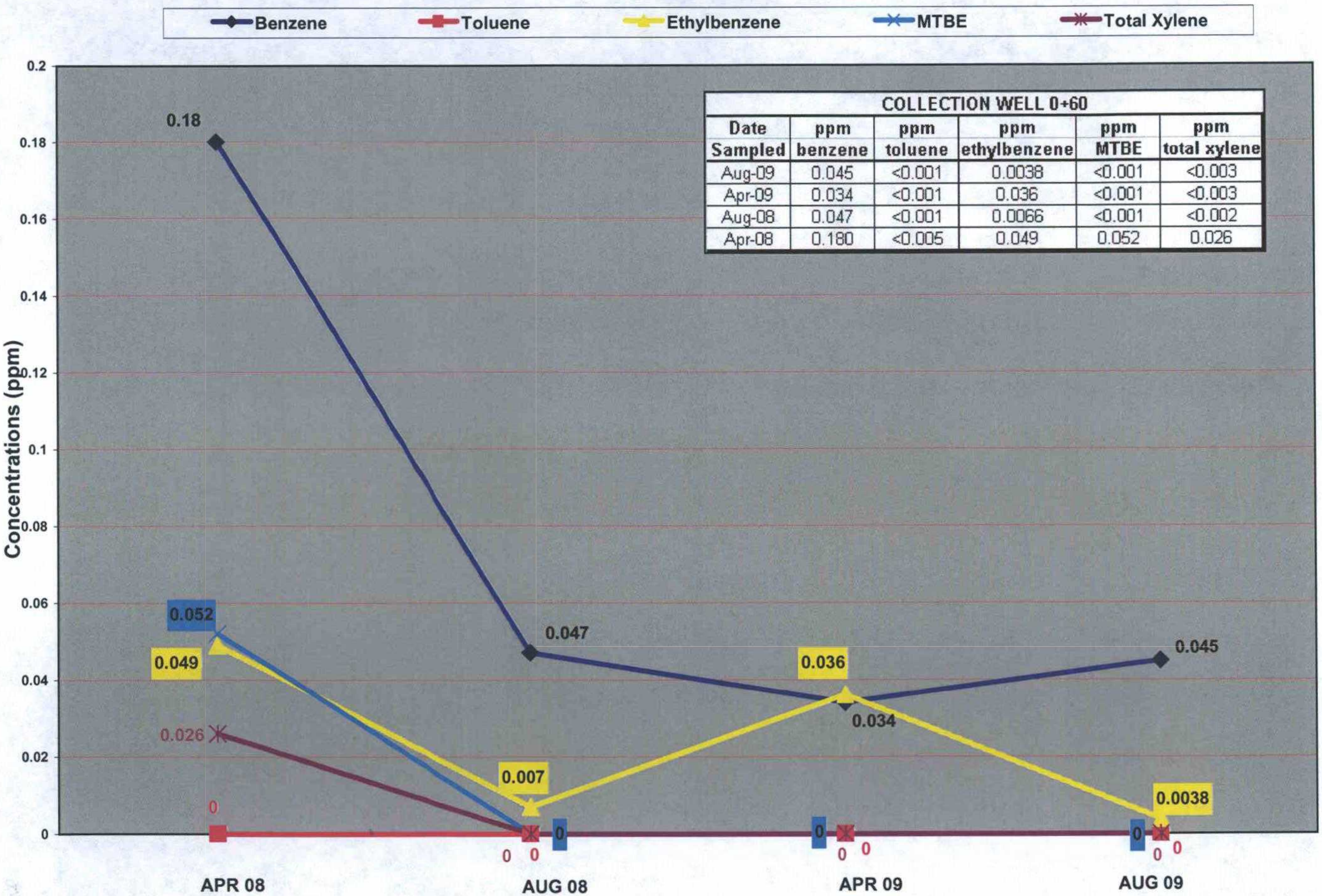
NS² = Not Sampled due to approved Facility-Wide Monitoring Plan

NS³ = Sample Inadvertently not Analyzed this Sampling Event

NR¹= No Sample Required - Well Contains Separate Phase Hydrocarbon

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

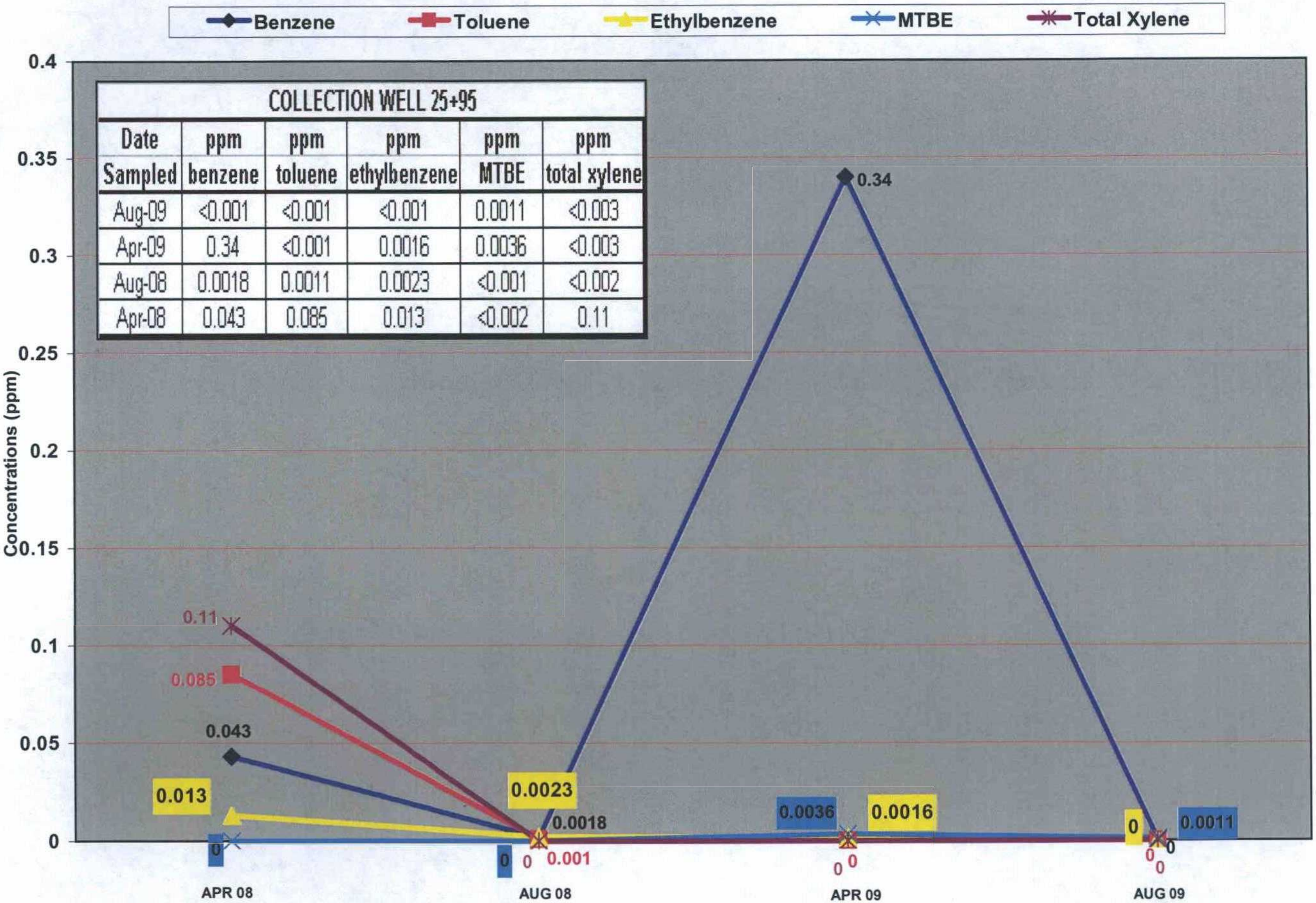
Collection Well 0+60



COLLECTION WELL 0+60					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	0.045	<0.001	0.0038	<0.001	<0.003
Apr-09	0.034	<0.001	0.036	<0.001	<0.003
Aug-08	0.047	<0.001	0.0066	<0.001	<0.002
Apr-08	0.180	<0.005	0.049	0.052	0.026

Collection Well 25+95

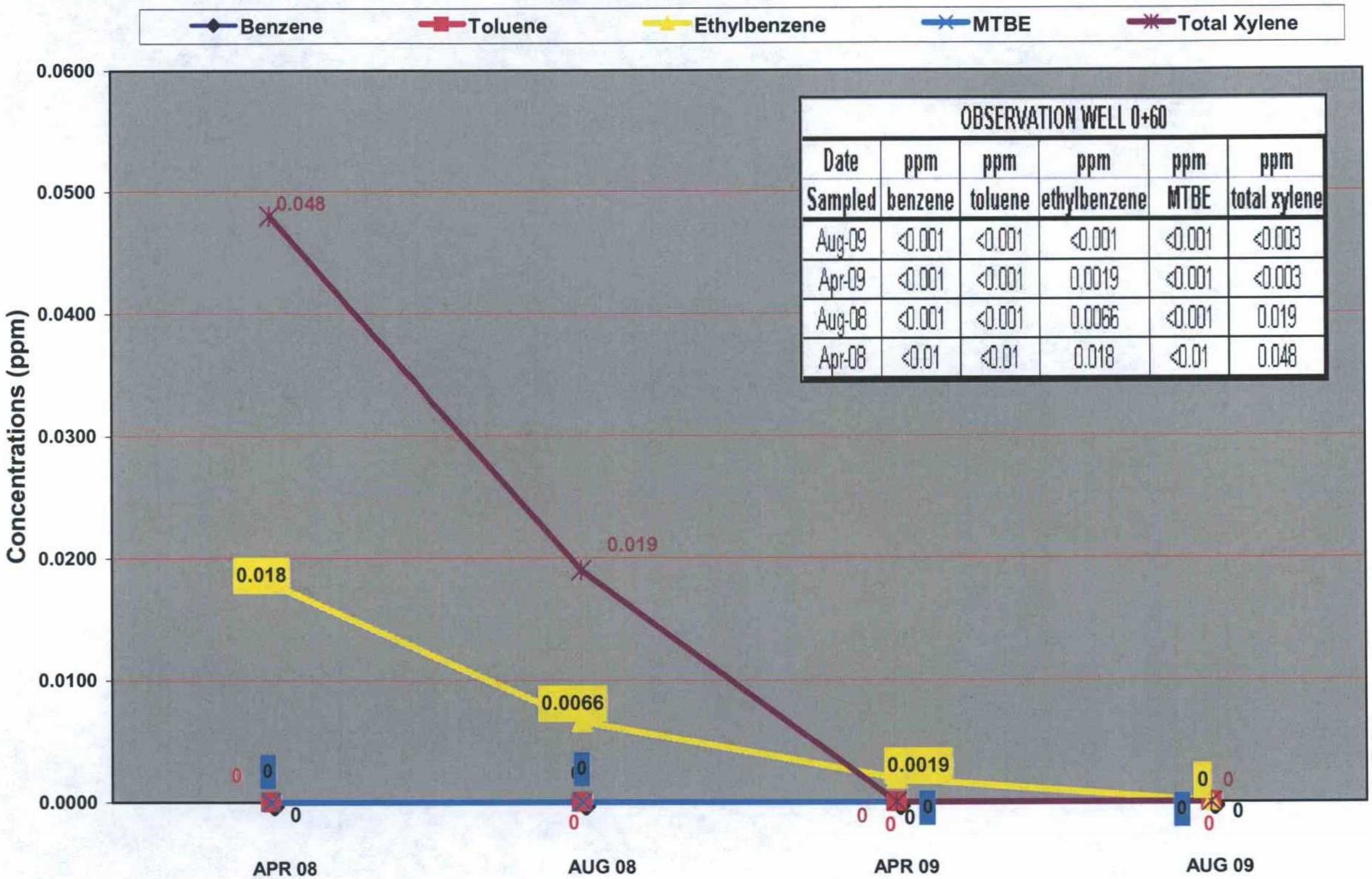
Appendix A - Tab 16.0



COLLECTION WELL 25+95					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	0.0011	<0.003
Apr-09	0.34	<0.001	0.0016	0.0036	<0.003
Aug-08	0.0018	0.0011	0.0023	<0.001	<0.002
Apr-08	0.043	0.085	0.013	<0.002	0.11

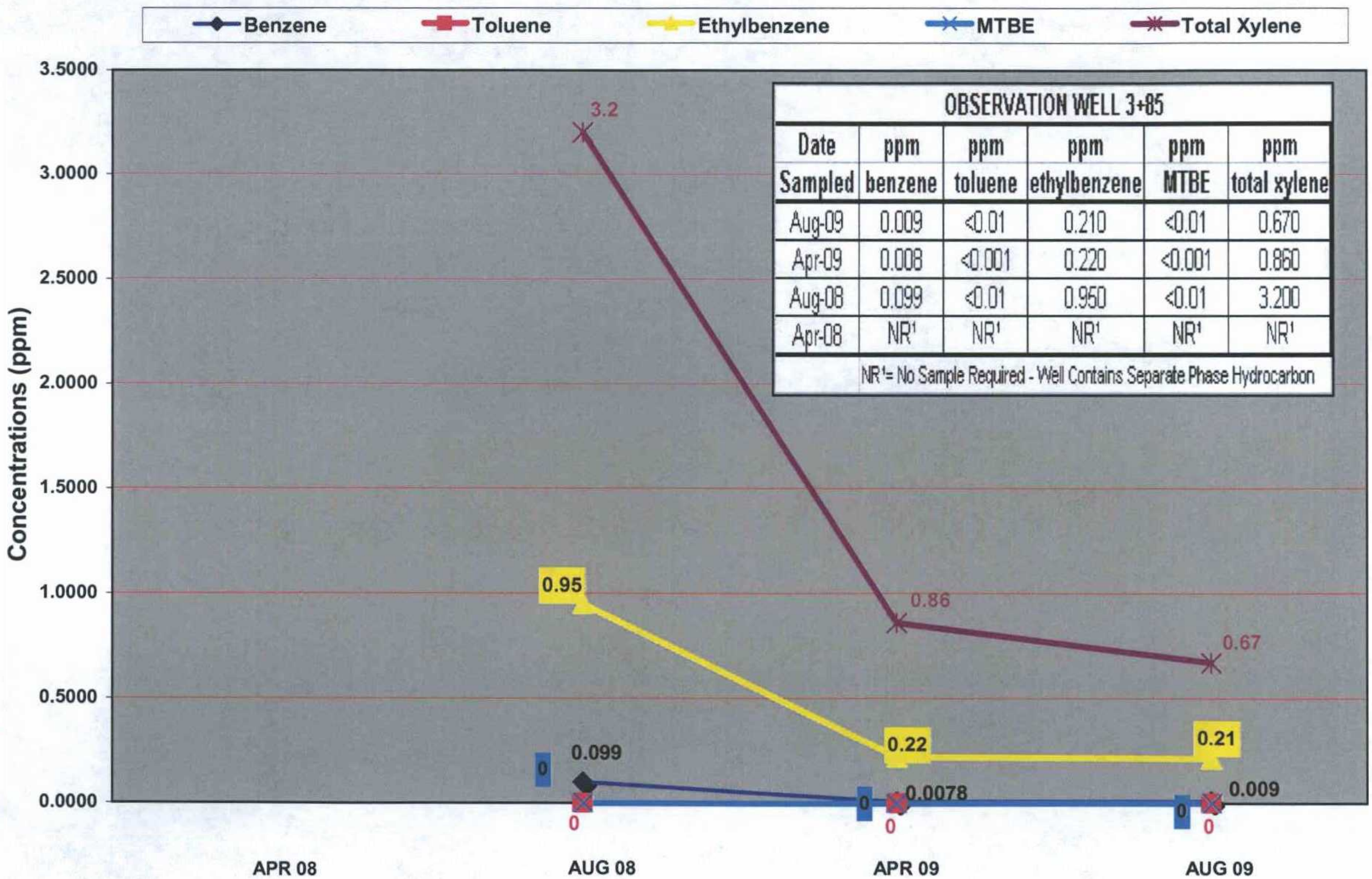
Observation Well 0+60

Appendix A - Tab 16.0



OBSERVATION WELL 0+60					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.001	<0.003
Apr-09	<0.001	<0.001	0.0019	<0.001	<0.003
Aug-08	<0.001	<0.001	0.0066	<0.001	0.019
Apr-08	<0.01	<0.01	0.018	<0.01	0.048

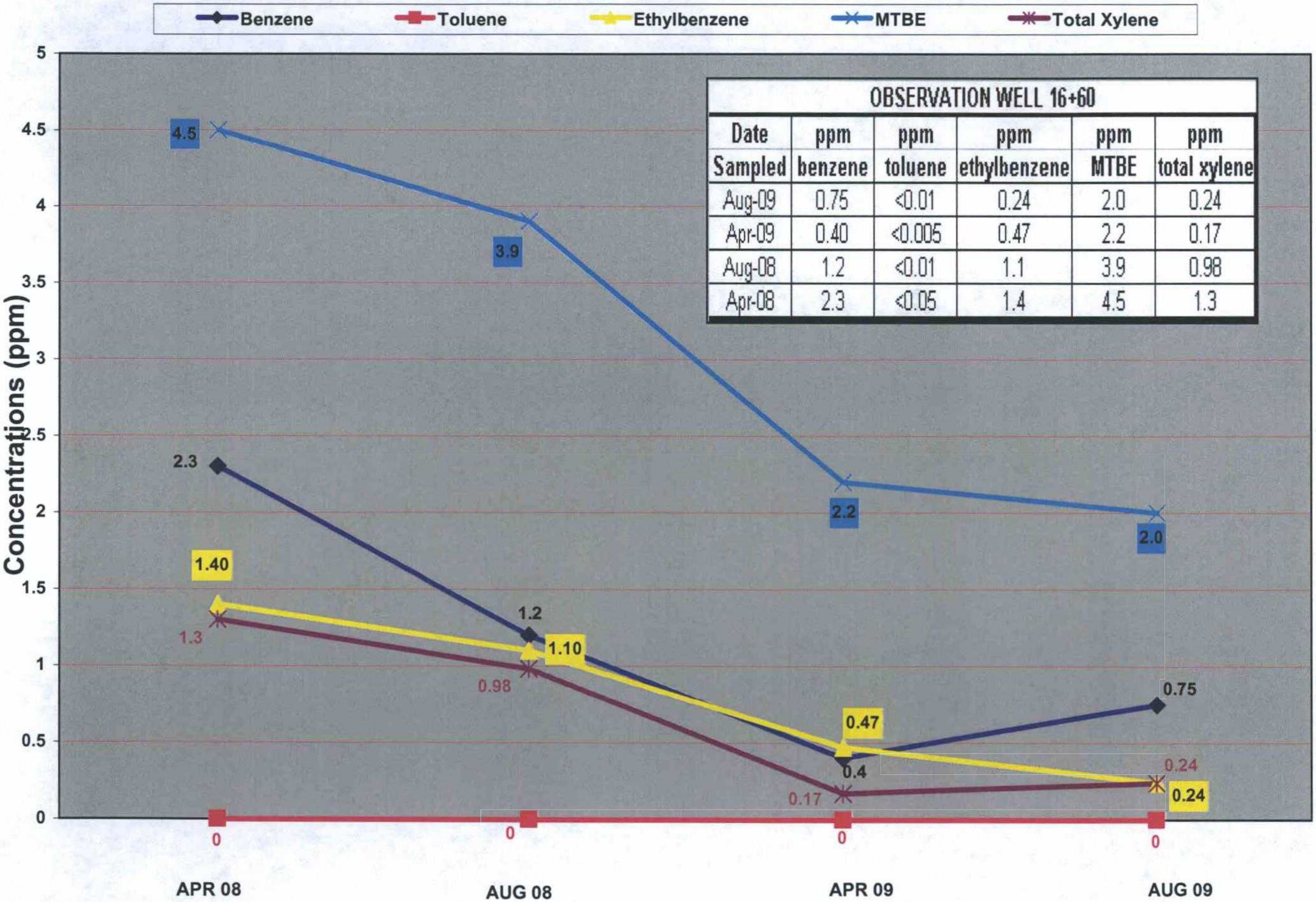
Observation Well 3+85



OBSERVATION WELL 3+85					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	0.009	<0.01	0.210	<0.01	0.670
Apr-09	0.008	<0.001	0.220	<0.001	0.860
Aug-08	0.099	<0.01	0.950	<0.01	3.200
Apr-08	NR[1]	NR[1]	NR[1]	NR[1]	NR[1]

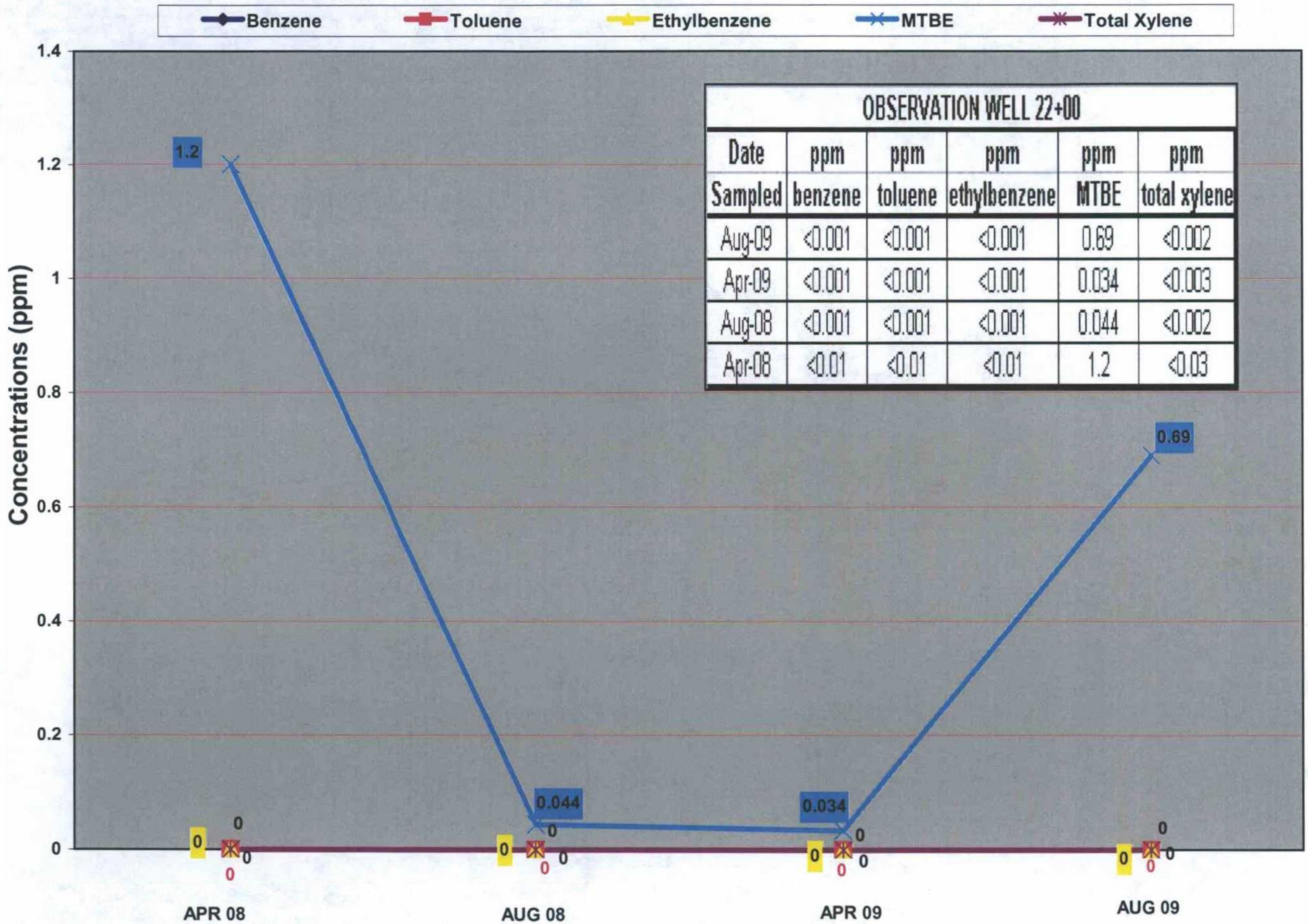
NR[1]= No Sample Required - Well Contains Separate Phase Hydrocarbon

Observation Well 16+60



OBSERVATION WELL 16+60					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	0.75	<0.01	0.24	2.0	0.24
Apr-09	0.40	<0.005	0.47	2.2	0.17
Aug-08	1.2	<0.01	1.1	3.9	0.98
Apr-08	2.3	<0.05	1.4	4.5	1.3

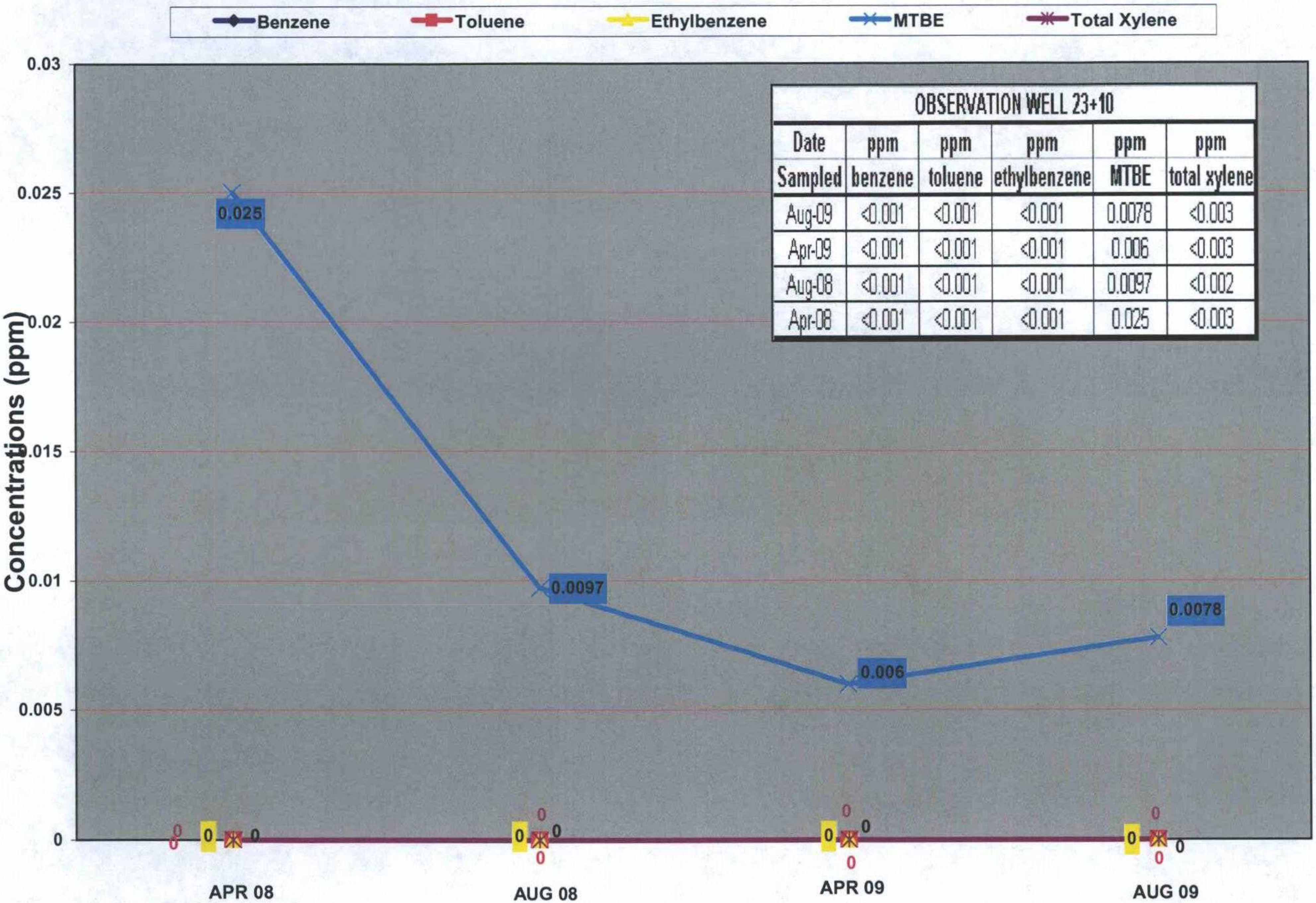
Observation Well 22+00



OBSERVATION WELL 22+00					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	0.69	<0.002
Apr-09	<0.001	<0.001	<0.001	0.034	<0.003
Aug-08	<0.001	<0.001	<0.001	0.044	<0.002
Apr-08	<0.01	<0.01	<0.01	1.2	<0.03

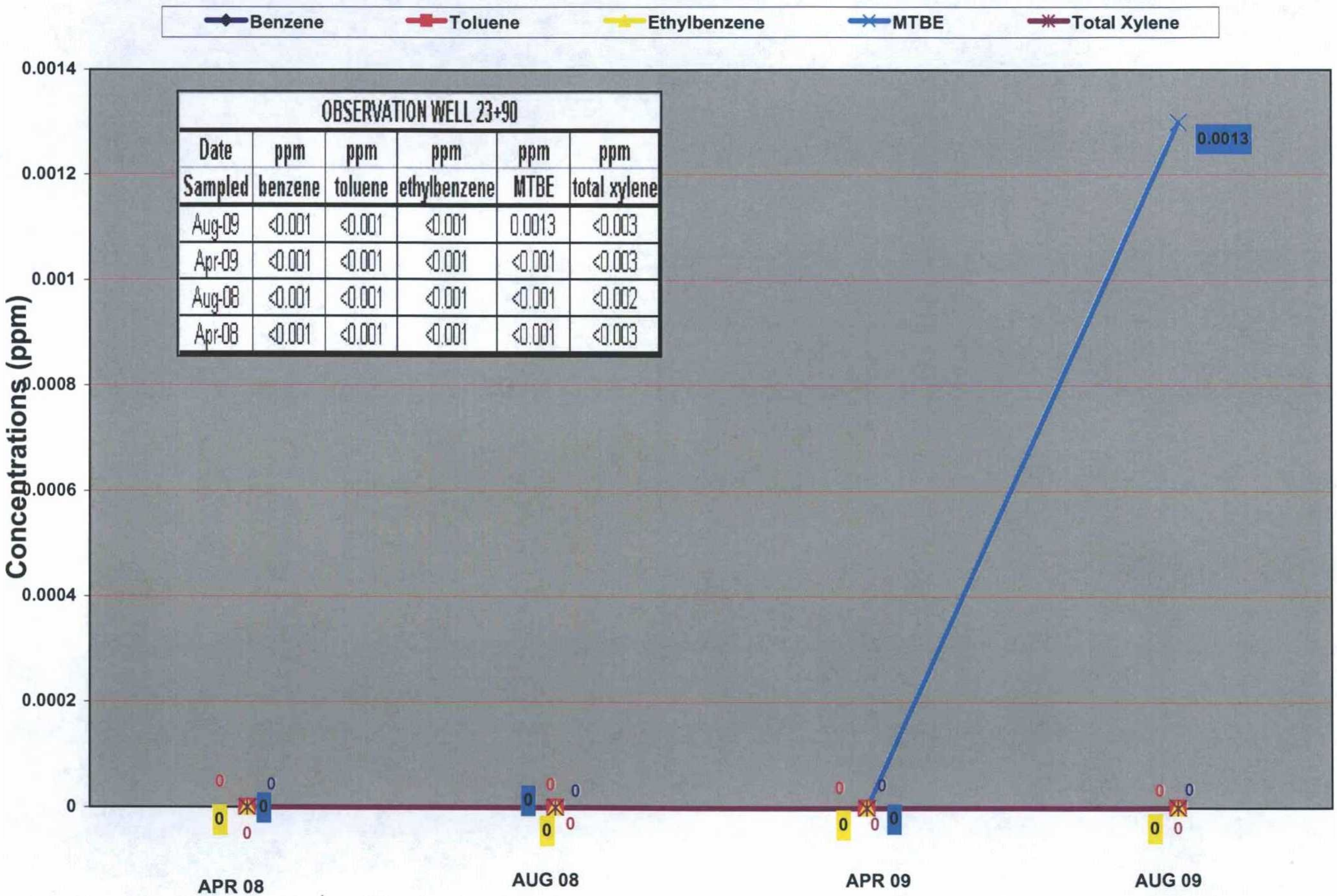
Observation Well 23+10

Appendix A - Tab 16.0



OBSERVATION WELL 23+10					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	0.0078	<0.003
Apr-09	<0.001	<0.001	<0.001	0.006	<0.003
Aug-08	<0.001	<0.001	<0.001	0.0097	<0.002
Apr-08	<0.001	<0.001	<0.001	0.025	<0.003

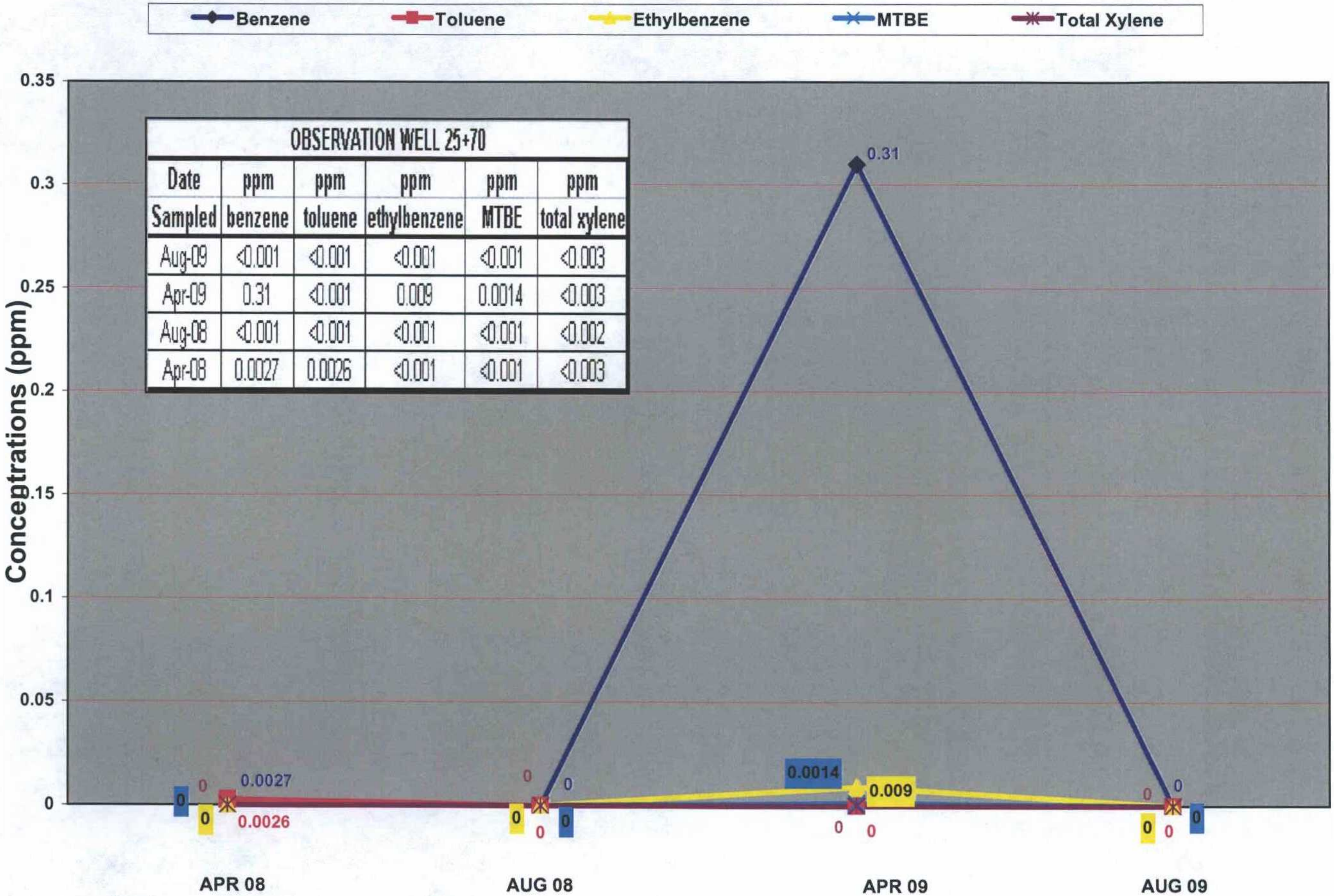
Observation Well 23+90



OBSERVATION WELL 23+90					
Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	0.0013	<0.003
Apr-09	<0.001	<0.001	<0.001	<0.001	<0.003
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.002
Apr-08	<0.001	<0.001	<0.001	<0.001	<0.003

Observation Well 25+70

Appendix A - Tab 16.0



OBSERVATION WELL 25+70

Date Sampled	ppm benzene	ppm toluene	ppm ethylbenzene	ppm MTBE	ppm total xylene
Aug-09	<0.001	<0.001	<0.001	<0.001	<0.003
Apr-09	0.31	<0.001	0.009	0.0014	<0.003
Aug-08	<0.001	<0.001	<0.001	<0.001	<0.002
Apr-08	0.0027	0.0026	<0.001	<0.001	<0.003

Appendix B Chemical Analytical Program

Hall Environmental Analysis Laboratory

QUALITY ASSURANCE PLAN

Effective Date: January 31st 2009

Revision 9.0

www.hallenvironmental.com

Control Number: 0000082

Approved By:

2-5-09

Nancy McDuffie
Laboratory Manager

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

Appendix E NMED-DWB Certification
Reserved, available upon request

Appendix F Terms and Definitions
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 20th 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 undo 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. HEALs 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.

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 with in a reasonable time frame.

In events where employee scheduling or current workload is such that new work cannot be incorporated, with out 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 with out 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

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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 them 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 establish 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 +/- 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. Employes 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.

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 volatiles 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 20th 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, uohms 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-Methylcarbomoyloximes 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 there after, 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 </= 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 </= 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.

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

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:

%Recovery = {(concentration* recovered)/(concentration* added)} X 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:

$$MDL = s * t\ (99\%)$$

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.

$$\text{Average} = (\Sigma x_I) / n$$

x_I = the value x in the I^{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.

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

Percent Recovery (MS, MSD, LCS and LCSD)

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

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 = $x \pm s * \text{s-dist}$

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:

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

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 +/- 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

$$95\%\ confidence = 2 \times s$$

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 x 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

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

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
Σ = the sum of all the individual values

2. Linear Regression

$y=mx+b$

a. Slope (m)

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

b. Intercept (b)

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

c. Correlation Coefficient (cc)

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

Or

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

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
Σ = 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)
$Yi = ((2*a*(C_x/C_{is})\text{^}2)-b\text{^}2+b+(4*a*c))/(4a)$

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

$$a = S_{(x2y)}S_{(xx)} - S_{(xy)}S_{(xx2)}\ /\ S_{(xx)}S_{(x2x2)} - [S_{(xx2)}]^2$$

$$b = S_{(xy)}S_{(x2x2)} - S_{(x2y)}S_{(xx2)}\ /\ S_{(xx)}S_{(x2x2)} - [S_{(xx2)}]^2$$

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

Where:

n = number of replicate x,y pairs
x = x values
y = y values
$w = S^{-2} / (\Sigma S^{-2}/n)$
$S_{(xx)} = (\Sigma x^2 w) - [(\Sigma xw)^2 / n]$
$S_{(xy)} = (\Sigma xyw) - [(\Sigma xw)*(\Sigma yw) / n]$
$S_{(xx2)} = (\Sigma x^3 w) - [(\Sigma xw)*(\Sigma x^2 w) / n]$
$S_{(x2y)} = (\Sigma x^2 yw) - [(\Sigma x^2 w)*(\Sigma yw) / n]$
$S_{(x2x2)} = (\Sigma x^4 w) - [(\Sigma x^2 w)^2 / n]$
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 un-necessary 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: AOHA, 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.

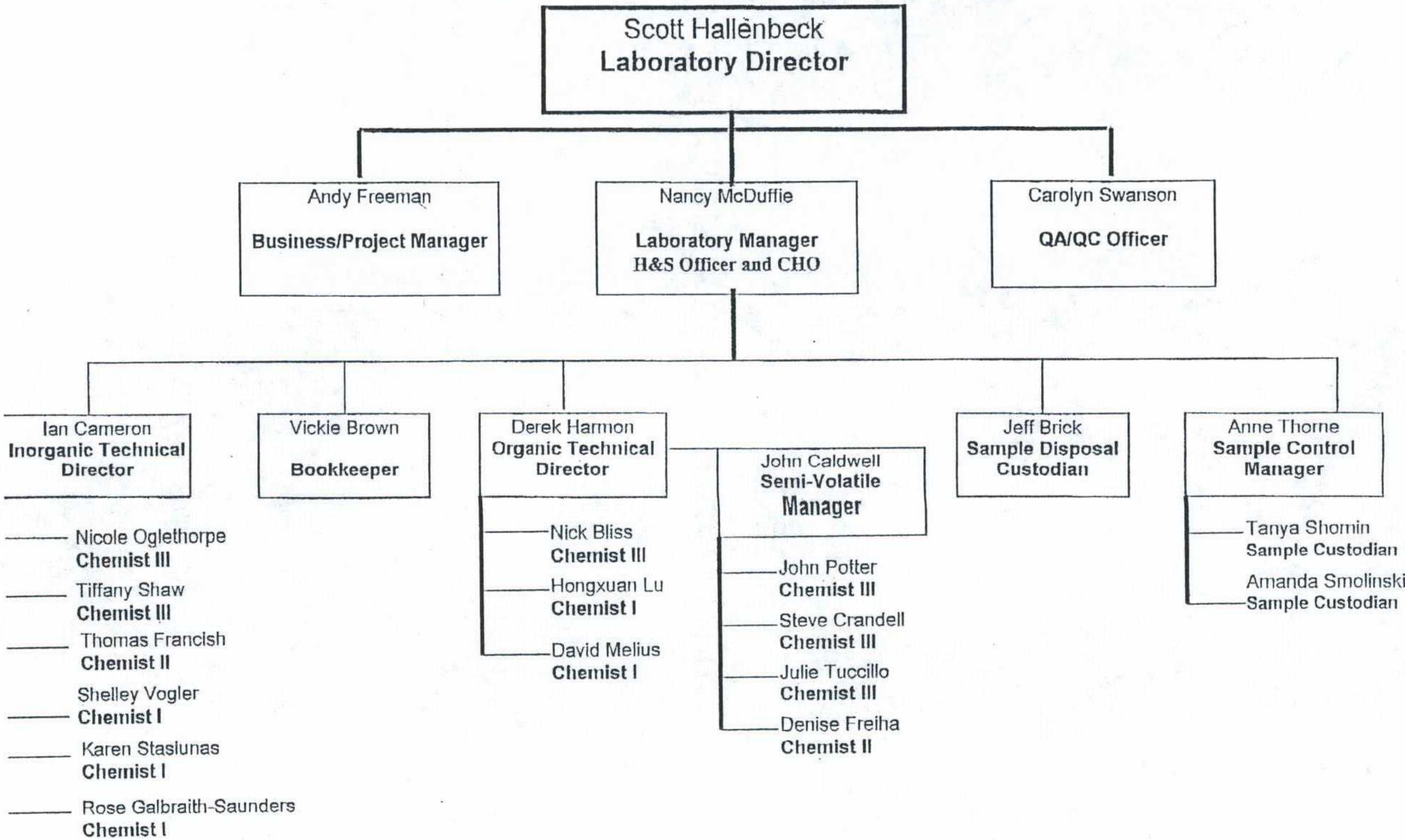
18. Environmental Perspective on the Emerging Oil Shale Industry, EPA Oil & Shale Research Group.

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:

Air	*Drinking Water*	*Non Potable Water*	*Solids and Chem. Waste*	*Tissue*
	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

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

Public Health Laboratory
3150 NW 229th Ave, Suite 100
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NELAP Recognized

Department of Agriculture, Laboratory Division
Department of Environmental Quality, Laboratory Division
Department of Human Services, Public Health Laboratory

ORELAP Fields of Accreditation

ORELAPID: NM100001
EPACode: NM00035

Certificate:
NM100001-009

Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Suite D
Albuquerque, NM, 87109

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

Analyte Code	Analyte
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

Reference	Code	Description
EPA 245.1 3	10036609	Mercury by Cold Vapor Atomic Absorption

Analyte Code	Analyte
1095	Mercury

Reference	Code	Description
EPA 300.0	10053006	Ion chromatography - anions.

Analyte Code	Analyte
1575	Chloride
1730	Fluoride
1810	Nitrate as N
1835	Nitrite
2000	Sulfate

Reference	Code	Description
EPA 300.0 2.1	10053200	Inorganic Anions in water by Ion Chromatography

Analyte Code	Analyte
1870	Orthophosphate as P

ORELAPID: NM100001
EPACode: NM00035

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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 5030B 2		10153409	Purge and trap for aqueous samples
	Analyte Code	**Analyte**	
	125	Extraction/Preparation	
EPA 504.1		10083008	EDB/DBCP/TCP micro-extraction, GC/ECD
	Analyte Code	**Analyte**	
	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
	Analyte Code	**Analyte**	
	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	

	4440	sec-Butylbenzene	
	5100	Styrene	
	4445	tert-Butylbenzene	
	5115	Tetrachloroethylene (Perchloroethylene)	
	5140	Toluene	
	4700	trans-1,2-Dicloroethylene	
	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**
	Analyte Code	***Analyte***	
	1955	Residue-filterable (TDS)	
SM 4500-H+ B 20th ED		**20104807**	**pH by Probe**
	Analyte Code	***Analyte***	
	1900	pH	
SM 5310 B 20th ED		**20137400**	**Total Organic Carbon by Combustion Infra-red Method**
	Analyte Code	***Analyte***	
	2040	Total Organic Carbon	

400

ORELAP Fields of Accreditation

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EPACode: NM00035

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NM100001-009

Hall Environmental Analysis Laboratory, Inc.

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MATRIX: Non-Potable Water

Reference		Code	Description
EPA 300.0		10053006	Ion chromatography - anions.
Analyte Code	Analyte		
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
Analyte Code	Analyte		
125	Extraction/Preparation		
EPA 3510C 3		10138202	Separatory Funnel Liquid-liquid extraction
Analyte Code	Analyte		
125	Extraction/Preparation		
EPA 5030B 2		10153409	Purge and trap for aqueous samples
Analyte Code	Analyte		
125	Extraction/Preparation		
EPA 6010B 2		10155609	ICP - AES
Analyte Code	Analyte		
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 by Cold Vapor Atomic Absorption
Analyte Code	Analyte		
1095	Mercury		

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EPA 8015B 2		**10173601**	**Non-halogenated organics using GC/FID**
	Analyte Code	***Analyte***	
	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 &**
	Analyte Code	***Analyte***	
	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**
	Analyte Code	***Analyte***	
	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**
	Analyte Code	***Analyte***	
	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**
	Analyte Code	***Analyte***	
	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	

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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

	4910	p-Isopropyltoluene	
	4440	sec-Butylbenzene	
	5100	Styrene	
	4445	tert-Butylbenzene	
	5115	Tetrachloroethylene (Perchloroethylene)	
	5140	Toluene	
	4700	trans-1,2-Dicloroethylene	
	4685	trans-1,3-Dichloropropylene	
	5170	Trichloroethene (Trichloroethylene)	
	5175	Trichlorofluoromethane	
	5235	Vinyl chloride	
	5260	Xylene (total)	
EPA 8270C 3		10185805	SemiVolitile Organic compounds by GC/MS
	Analyte Code	***Analyte***	
	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

Analyte Code	Analyte
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

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6665	Pyrene		
SM 2540 C 20th ED		**20050004**	**Total Dissolved Solids**
Analyte Code	***Analyte***		
1955	Residue-filterable (TDS)		
SM 4500-H+ B 20th ED		**20104807**	**pH by Probe**
Analyte Code	***Analyte***		
1900	pH		

ORELAP Fields of Accreditation

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MATRIX: Solids

Reference		Code	Description
EPA 3050A		10135407	Acid Digestion of Sediments, Sludges, and soils
Analyte Code	*Analyte*		
125	Extraction/Preparation		
EPA 3540C 3		10140202	Soxhlet Extraction
Analyte Code	*Analyte*		
125	Extraction/Preparation		
EPA 3545		10140804	Pressurized Fluid Extraction (PFE)
Analyte Code	*Analyte*		
125	Extraction/Preparation		
EPA 5035		10154004	Closed-System Purge-and-Trap and Extraction for Volatile Organics in So
Analyte Code	*Analyte*		
125	Extraction/Preparation		
EPA 6010B 2		10155609	ICP - AES
Analyte Code	*Analyte*		
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
Analyte Code	*Analyte*		
1095	Mercury		
EPA 8015B 2		10173601	Non-halogenated organics using GC/FID
Analyte Code	*Analyte*		
9369	Diesel range organics (DRO)		
9408	Gasoline range organics (GRO)		
102	Motor Oil		

ORELAPID: NM100001
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EPA 8021B 2		10174808	Aromatic and Halogenated Volatiles by GC with PID and/or ECD Purge &
	Analyte Code	**Analyte**	
	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
	Analyte Code	**Analyte**	
	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
	Analyte Code	**Analyte**	
	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
	Analyte Code	**Analyte**	
	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

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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-Dicloroethylene

	4685	trans-1,3-Dichloropropylene	
	5170	Trichloroethene (Trichloroethylene)	
	5175	Trichlorofluoromethane	
	5235	Vinyl chloride	
	5260	Xylene (total)	
EPA 8270C 3		**10185805**	**SemiVolitile Organic compounds by GC/MS**
	Analyte Code	***Analyte***	
	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	

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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

Analyte Code	***Analyte***
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

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

BILL RICHARDSON
GOVERNOR

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

Chemical Analytical Reports

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:

☒ Standard ☐ Rush ______

Project Name:

North Barrier Wall - Semi-Annual 2009

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904097	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX, MTBE only	8270 (Semi-VOA)	8015B - DRO only				Air Bubbles (Y or N)
4/06/09	1230p	H2O	CW 0+60	5-VOA	HCL	1										X		X				
	1245		OW 0+60			2			X							X						
	110p		OW 3+85			3			X							X						
	130Pm		OW 11+15			4			X							X						
	135Pm		OW 11+15 FD			5			X							X						
	150p		OW 16+60			6			X							X						
	205P		OW 19+50			7			X							X						
	215p		OW 22+00			8			X							X						
	230P		OW 23+10			9			X							X						
	240P		OW 23+90			10			X							X						
	250p		OW 25+70	5-VOA		11			X							X						
	3Pm		Field Blank	3-VOA		12			X							X						

Date	Time	Relinquished by	Received by	Date	Time
4/06/09	345pm	Cindy Hurtado	[signature]	4/7/09	1000

Remarks: page 1 of 2

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.

Cl of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: North Barrier Wall Semi-Annual 2009

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: ☒ Yes ☐ No

Sample Temperature:

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904091	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (~~Gas~~/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
4/06/09	326P	H2O	CW5795	5-VOA	HCL	13			X							X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/06/09	345p	Cindy Hurtado	Anne Th	4/7/09	1000
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: page 2 of 2

If n[illegible]ry, samples submitted to Hall Environmental may be subcontracted to other accredited laborat[illegible] This serves as notice of this possibility. [illegible]

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: Semi-Annual 2009 - Seeps

Project #:

Project Manager:

Sampler: Cindy & Bob

On Ice: Yes No

Sample Temperature:

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0901199	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Bromide Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX & TBE only	8270 (Semi-VOA)	Alkalinity Carbon Dioxide				Air Bubbles (Y or N)
1/08/09	1010A	H2O	Seep #1	3-VOA	HCL	-1										X						
				1-liter	Amber	-1											X					
				1-125ml	H2SO4	-1								X								
				1-500ml		-1								X				X				
	1020A	H2O	Seep #1 FD	3-VOA	HCL	-2										X						
				1-liter	Amber	-2											X					
				1-125ml	H2SO4	-2								X								
				1-500ml		-2								X				X				
	1030A		Seep #3	3-VOA	HCL	-3										X						
				1-liter	Amber	-3											X					
				1-125ml	H2SO4	-3								X								
				1-500ml		-3								X				X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
1-8-09	1:15	Robert Krakow		1/9/09	1015
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: ANION LIST: Fluoride, Chloride, Bromide
Nitrogen-Nitrite, Nitrogen-Nitrate
Phosphorous - Orthophosphate (As P)
Sulfate

page 1 of 2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. ...

Ch of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Semi-Annual 2009- Seeps

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: Yes No

Sample Temperature:

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904149	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) MTBE BTEX only	8270 (Semi-VOA)					Air Bubbles (Y or N)
/08	1040A	H_2O	Field Blank	3-VOA	HCl	-4			X							X						
			Trip Blank At 4/9/09			-5																

Date:	Time:	Relinquished by:	Received by:	Date	Time
-8-09	1:15	Robert Krakow	[signature]	4/9/09	10 15
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: page 2 of 2

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Semi Annual 2009 - Seeps

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: Yes No

Sample Temperature: 4

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904109	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Bromide Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX, MTBE only	8270 (Semi-VOA)	Alkalinity / Carbon Dioxide				Air Bubbles (Y or N)
4/07/09	215pm	H2O	Seep #6	3-VOA	HCL	1										X						
				1-liter	Amber	1											X					
				1-125ml	H2SO4	1								X								
				1-500 ml		1								X				X				
4/07/09	130pm		Seep #8	3-VOA	HCL	2											X					
4/07/08	130pm			1-liter	Amber	2												X				
				1-125ml	H2SO4	2								X								
				1-500ml		2								X				X				
4/07/09	235p		Seep #9	3-VOA	HCL	3										X						
				1-liter	Amber	3											X					
				1-125ml	H2SO4	3								X								
				1-500ml		3								X				X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/07/09	250pm	Cindy Hurtado	[signature]	4/8/09	1025
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

420

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3911

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: San Juan River Bluff - Semi Annual - 2009

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: [illegible]

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904110	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals Totals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX, MTBE only	8270 (Semi-VOA)	Cation/Anion Balance	WQCC Dissolved Metals	CO_2 - Alkalinity		Air Bubbles (Y or N)
4-7-09	12:20	H_2O	outfall # 2	3-VOA	HCL	1										X						
				1-250ml	HNO_3	1													X			
				1-500ml	HNO_3	1							X									
				1-250ml	H_2SO_4	1												X				
				1-500ml	—	1												X		X		
4-7-09	12:45	H_2O	outfall # 3	3-VOA	HCl	2										X						
				1-250ml	HNO_3	2													X			
				1-500ml	HNO_3	2							X									
				1-250ml	H_2SO_4	2												X				
				1-500ml	—	2												X		X		
			Trip Blank			3																

Date	Time	Relinquished by	Received by	Date	Time
4/07/09	252P	Cindy Hurtado	[illegible]	4/8/09	1025
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

C[illegible]-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: SEMI-Annual 2009

Project #:

Project Manager:

Sampler: Cindy Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904146	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
4/07/09	815A	H2O	MW #1	5-VOA	HCL	-1			X							X						
	850A		MW #8			-2			X							X						
	915A		MW #30			-3			X							X						
	945A		MW #13			-4			X							X						
	1005		MW# 33			-5			X							X						
	1010		MW#33 Field Dupe			-6			X							X						
	1035A		MW#12			-7			X							X						
	1045A		MW# 35			-8			X							X						
	11Am		MW #37			-9			X							X						
	1115Am		MW #38			-10			X							X						
	1120A		Field Blank			-11			X							X						
			Trip Blank 4/8/09			-12			X							X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/07/09	2pm	Cindy Hurtado	[signature]	4/8/09	1030
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. [illegible]

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: Cross-Gradient Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

Office Use Only / Cooler: Yes / No

Sample Temperature:

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908231	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQcc Dissolved Metals	Cation/Anion	Alkalinity/CO_2		Air Bubbles (Y or N)
8-19-09	950	H2O	MW#27	6-VOA	HCL	1			X							X						
				liter Amber		1											X					
				1-500ml	HNO3	1							X									
				2-125ml	HNO3	1												X	X			
				1-125ml	H2SO4	1													X			
				1-500ml		1													X	X		
8-19-09	1020A	H2O	MW #33	6-VOA	HCL	2			X							X						
				liter Amber		2											X					
				1-500 ml	HNO3	2							X									
				2-125ml	Filtered HNO3	2												X	X			
				1-125ml	H2SO4	2													X			
				1-500ml		2													X	X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-19-09	105p	Cindy Hurtado	[signature]	8/20/09	10:00
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Pg 1 of 2
per Cindy client wants cat/anion balance. TJ 8/20/09

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refinery

Mailing 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)

Accreditation
☐ NELAP ☐ Other ____

☐ EDD (Type) ____

Turn-Around Time:
☒ Standard ☐ Rush ____

Project Name: Cross Gradient Wells - Annual - 8 - 2009

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: Yes No

Sample Temperature: 6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908331	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity, CO_2	Air Bubbles (Y or N)
8-19-09	1030A	H_2O	Field Blank	4-VOA	HCL	3			X							X					
8-19-09	1050A	H_2O	MW #32	6-VOA	HCL	4			X							X					
				liter Amber		4											X				
				1-500ml	HNO_3	4							X								
				2-125ml	filtered HNO_3	4												X	X		
				1-125ml	H_2SO_4	4													X		
				1-500ml		4													X	X	
			Trip Blank			5															

Date	Time	Relinquished by	Received by	Date	Time
8/19/09	106pm	Cindy Hurtado	[signature]	8/20/09	10:00

Remarks: Pg 2 of 2 per Cindy client wants Cat/anion balance. TJ 8/20/09

If ne[cessar]y, samples submitted to Hall Environmental may be subcontracted to other accredited laborato[ries]. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the [analytic]al report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: Cross-Gradient Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908336	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity, CO_2		Air Bubbles (Y or N)
8-19-09	730A	H2O	MW#1	6-VOA	HCL	1			X							X						
|	|	|	|	liter Amber		1											X					
|	|	|	|	1-500ml	HNO3	1							X									
|	|	|	|	2-125ml	filtered HNO3	1												X	X			
|	|	|	|	1-125ml	H2SO4	1													X			
|	|	|	|	1-500ml		1													X	X		
8-19-09	820A	H2O	MW#13	6-VOA	HCL	2			X							X						
|	|	|	|	liter Amber		2											X					
|	|	|	|	1-500ml	HNO3	2							X									
|	|	|	|	2-125ml	filtered HNO3	2												X	X			
|	|	|	|	1-125ml	H2SO4	2													X			
|	|	|	|	1-500ml		2													X	X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-19-09	1PM	Cindy Hurtado	[signature]	8/20/09	10:00
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: pg 1 of 2
Per Cindy client wants cat/anion balance. TB 8/20/09

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505-632-3811

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

Accreditation
☐ NELAP ☐ Other ____

☐ EDD (Type) ____

Turn-Around Time:
☒ Standard ☐ Rush ____

Project Name: Cross-Gradient Wells - Annual 8-2009

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: Yes No

Sample Temperature:

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908335	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity, CO_2		Air Bubbles (Y or N)
8-19-09	830A	H2O	MW #13 FD	6-VOA	HCL	3			X							X						
				liter Amber		3											X					
				1-500ml	HNO3	3							X									
				2-125ml	HNO3 filtered	3												X	X			
				1-125	H2SO4	3													X			
				1-500ml		3													X	X		
8-19-09	915	H2O	MW #26	6-VOA	HCL	4			X							X						
				liter Amber		4											X					
				1-500ml	HNO3	4							X									
				2-125ml	HNO3 filtered	4												X	X			
				1-125ml	H2SO4	4													X			
				1-500ml		4													X	X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/19-09	1:01pm	Cindy Hurtado	[signature]	8/20/09	10:00
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:
Pg 2 of 2 #5 Trip Blank ss
Per Cindy client wants cat/anion balance TJ 8/20/09

If nec[...], samples submitted to Hall Environmental may be subcontracted to other accredited laborato[...]is serves as notice of this possibility. [...]

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: Down Gradient Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: Yes No

Sample Temperature: 4.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908360	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity, CO_2		Air Bubbles (Y or N)
8/20/09	8Am	H2O	MW #11	6-VOA	HCL	1			X							X						
				liter Amber		1											X					
				1-500ml	HNO3	1							X									
				2-125ml	Filtered HNO3	1												X	X			
				1-125ml	H2SO4	1													X			
				1-500ml		1													X	X		
8/20/09	810A	H2O	MW #11 FD	6-VOA	HCL	2			X							X						
				liter Amber		2											X					
				1-500ml	HNO3	2							X									
				2-125ml	Filtered HNO3	2												X	X			
				1-125ml	H2SO4	2													X			
				1-500ml		2													X	X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/20/09	235p	Cindy Hurtado	[signature]	8/21/09	10:05
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: pg 1 of 2

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: DOWN Gradient Wells -Annual-8-2009

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908360	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity, CO_2		Air Bubbles (Y or N)
8/20/09	8:40A	H_2O	MW#12	6-VOA	HCL	3			X							X						
				liter-Amber		3											X					
				1-500ml	HNO_3	3							X									
				2-125ml	Filtered HNO_3	3												X	X			
				1-125ml	H_2SO_4	3													X			
				1-500ml		3													X	X		
8/20/09	920A	H_2O	MW#34	6-VOA	HCL	4			X							X						
				liter Amber		4											X					
				1-500ml	HNO_3	4							X									
				2-125ml	Filtered HNO_3	4												X	X			
				1-125ml	H_2SO_4	4													X			
				1-500ml		4													X	X		

Date: 8/20'09 Time: 235p Relinquished by: Cindy Hurtado

Received by: [signature] Date 10:05 Time 8/21/09

Date: Time: Relinquished by:

Received by: Date Time

Remarks: Pg 2 of 2 Trip Blank AT #5

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: Down Gradient Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 0.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908361	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity/CO_2		Air Bubbles (Y or N)
8-20-09	945A	H2O	MW#35	6-VOA	HCL	1			X							X						
				liter Amber		1											X					
				1-500ml	HNO3	1							X									
				2-125ml	filtered HNO3	1												X	X			
				1-125ml	H2SO4	1													X			
				1-500ml		1													X	X		
8-20-09	1005	H2O	MW#37	6-VOA	HCL	2			X							X						
				liter Amber		2											X					
				1-500ml	HNO3	2							X									
				2-125ml	filtered HNO3	2												X	X			
				1-125ml	H2SO4	2													X			
				1-500ml		2													X	X		

Date	Time	Relinquished by	Received by	Date	Time
8-20-09	230pm	Cindy Hurtado	[signature]	8/21/09	10:05

Remarks: Pg 1 of 2

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.

430

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: Down Gradient Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 0°C

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908361	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity, CO_2		Air Bubbles (Y or N)
8-20-09	1040	H_2O ~~1040~~	MW#38	6-VOA	HCL	3			X							X						
				liter Amber		3											X					
				1-500ml	HNO_3	3							X									
				2-125ml	filtered HNO_3	3												X	X			
				1-125ml	H_2SO_4	3													X			
				1-500ml		3													X	X		
8-20-09	1030	H_2O	Field Blank	4-VOA	HCL	4			X							X						
			Trip Blank			5																

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-20-09	230pm	Cindy Hurtado	[signature]	8/21/09	10:05
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: pg 2 of 2

If ne[...]y, samples submitted to Hall Environmental may be subcontracted to other accredited laborato[...]his serves as notice of this possibility. [...]

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: North Barrier Wall – Annual – 8-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908309	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8260 - MTBE, BTEX only	DRO - 8015			Air Bubbles (Y or N)
8-18-09	815A	H2O	OW 25+70	6-VOA	HCL	1			X									X				
	835A		OW 23+90			2			X									X				
	850A		OW 23+10			3			X									X				
	915A		OW 22+00			4			X									X				
	945A		OW 16+60			5			X									X				
	10Am		OW 11+15			6			X									X				
	1020A		OW 3+85			7			X									X				
	1035A		OW 0+60			8			X									X				
	1050A		CW 0+60			9												X	X			
	1055A		CW 0+60 FD			10												X	X			
	1130A		CW 25+95	6-VOA		11												X	X			
	1115A		Field Blank	4-VOA	HCL	12			X									X				

Date: 8/18/09 Time: 245p Relinquished by: Cindy Hurtado

Received by: [signature] 10:05 8/19/09

Date: Time: Relinquished by:

Received by: Date Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Refinery Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy / Bob

[redacted]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	[redacted]	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity / CO_2		Air Bubbles (Y or N)
8/24/09	10AM	H_2O	MW#4	6-VOA	HCL	1			X							X						
				Liter-Amber		1											X					
				1-500ml	HNO_3	1							X									
				2-125ml	Filtered HNO_3	1												X	X			
				1-125ml	H_2SO_4	1													X			
				1-500ml		1													X	X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/24/09	1:45pm	Cindy Hurtado	[signature]	8/25/09	10:35
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Refinery Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy / Bob

[redacted]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	[redacted]	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity/CO_2		Air Bubbles (Y or N)
8-24-09	830A	H_2O	RW #1	6-VOA	HCL	1			X							X						
				liter-Amber		1											X					
				1-500ml	HNO_3	1							X									
				2-125ml	HNO_3 (filtered)	1												X	X			
				1-125ml	H_2SO_4	1													X			
				1-500ml		1													X	X		
	910A		MW #31	6-VOA	HCL	2			X							X						
				liter Amber		2											X					
				1-500ml	HNO_3	2							X									
				2-125ml	HNO_3 filtered	2												X	X			
				1-125ml	H_2SO_4	2													X			
				1-500ml		2													X	X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/24/09	158pm	Cindy Hurtado	[signature] 10:35	8/25/09	
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: pg 1 of 2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation

☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:

☒ Standard ☐ Rush ______

Project Name: Refinery Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

[redacted]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	[redacted]	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity/CO_2		Air Bubbles (Y or N)
8/24/09	920A	H_2O	MW#31 FD	6-VOA	HCL	3			X							X						
				liter Amber		3											X					
				1-500ml	HNO_3	3							X									
				2-125ml	filtered HNO_3	3												X	X			
				1-125ml	H_2SO_4	3													X			
				1-500ml		3													X	X		
			Trip Blank			4																

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/24/09	159pm	Cindy Hurtado	[signature]	8/25/09	10:35
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: pg 2 of 2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation

☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:

☒ Standard ☐ Rush ______

Project Name: Refinery Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy / Bob

[redacted]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	[redacted]	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity/CO_2		Air Bubbles (Y or N)
8-26-09	11Am	H_2O	RW #23	6-VOA	HCL	1			X							X						
				liter Amber		1											X					
				1-500ml	HNO_3	1							X									
				2-125ml	Filtered HNO_3	1												X	X			
				1-125ml	H_2SO_4	1													X			
				1-500ml		1													X	X		
8-26-09	1125A	H_2O	MW #40	6-VOA	HCL	2			X							X						
				liter Amber		2											X					
				1-500ml	HNO_3	2							X									
				2-125ml	Filtered HNO_3	2												X	X			
				1-125ml	H_2SO_4	2													X			
				1-500ml		2													X	X		

Date: 8-25-09 Time: 130p Relinquished by: Cindy Hurtado

Received by: [signature] Date 8/26/09 Time 10:00

Date: Time: Relinquished by:

Received by: Date Time

Remarks: Trip Blank #3 on

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: Refinery Wells -Annual-8-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: ☑ Yes ☐ No

Sample Temperature: [illegible]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908124	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion Balance	Alkalinity/CO_2		Air Bubbles (Y or N)
8-24-09	1115A	H_2O	RW #15	6-VOA	HCL	1			X							X						
				liter Amber		1											X					
				1-500ml	HNO_3	1							X									
				2-125ml	filtered HNO_3	1												X	X			
				1-125ml	H_2SO_4	1													X			
				1-500ml		1													X	X		
	1240A		MW #30	6-VOA	HCL	2			X							X						
				liter Amber		2											X					
				1-500ml	HNO_3	2							X									
				2-125ml	filtered HNO_3	2												X	X			
				1-125ml	H_2SO_4	2													X			
				1-500ml		2													X	X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-24-09	152pm	Cindy Hurtado	[signature]	8/25/09	10:35
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: pg 1 of 2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Refinery Wells -Annual-8-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice ☒ Yes ☐ No

Sample Temperature: 3.9

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908427	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion Balance	Alkalinity, CO_2		Air Bubbles (Y or N)
8/24/09	115p	H_2O	MW#44	6-VOA	HCL	3			X							X						
				liter Amber		3											X					
				1-500ml	HNO_3	3							X									
				2-125ml	filtered HNO_3	3												X	X			
				1-125ml	H_2SO_4	3													X			
				1-500ml		3													X	X		
8/24/09	125p	H_2O	Field Blank	4VOA	HCL	4			X							X						
			Trip Blank			5																

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/24/09	153p	Cindy Hurtado	[signature]	8/25/09	10:35
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Pg 2 of 2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: Refinery Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: Yes No

Sample Temperature: 3.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908495	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity/CO_2		Air Bubbles (Y or N)
8-25-09	9AM	H2O	MW#8	6-VOA	HCL	1			X							X						
				liter-Amber		1											X					
				1-500ml	HNO_3	1							X									
				2-125ml	filtered HNO_3	1												X	X			
				1-125ml	H_2SO_4	1													X			
				1-500ml		1													X	X		
	935A		MW#29	6-VOA	HCL	2			X							X						
				liter Amber		2											X					
				1-500ml	HNO_3	2							X									
				2-125ml	filtered HNO_3	2												X	X			
				1-125ml	H_2SO_4	2													X			
				1-500ml		2													X	X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-25-09	140pm	Cindy Hurtado	[signature]	8/26/09	10:00
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: pg 1 of 2

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: Refinery Wells - Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: ☐ Yes ☐ No

Sample Temperature: 0.9

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908395	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion	Alkalinity/CO_2		Air Bubbles (Y or N)
8/25/09	1020A	H2O	RW #9	6-VOA	HCL	3			X							X						
				liter-Amber		3											X					
				1-500ml	HNO3	3							X									
				2-125ml	Filtered HNO3	3												X	X			
				1-125ml	H2SO4	3													X			
				1-500ml		3													X	X		
8/25/09	1030A	H2O	Field Blank	4-VOA	HCL	4			X							X						
			Trip Blank			5																

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/25/09	141p	Cindy Hurtado	[signature]	8/26/09	10:00
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: pg 2 of 2

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.

440

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: San Juan River Bluff -Annual- 8-2009

Project #:

Project Manager:

Sampler: Cindy Gray/Bob

On Ice: ☑ Yes ☐ No

Sample Temperature: [illegible]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908448	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX/MTBE only	8270 (Semi-VOA)	Alkalinity, CO_2				Air Bubbles (Y or N)
8-25-09	1:35	H_2O	Seep # 6	3-VOA	HCL	1										X						
				1 liter Amber		1											X					
				1-125 ml	H_2SO_4	1								X								
				1-500 ml		1												X				
8-25-09	2:00	H_2O	Seep # 1	3-VOA	HCl	2										X						
				1 liter	Amber	2											X					
				1-125 ml	H_2SO_4	2								X								
				1-500 ml		2												X				
8-25-09	2:20	H_2O	Seep #3	3-VOA	HCl	3										X						
				1 Liter	amber	3											X					
				1-125 ml	H_2SO_4	3								X								
				1-500 ml		3												X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-25-09	3:05	Robert Krakow	[signature]	8/26/09	10:00
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Pg 1 of 2

Ch[illegible]-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: Annual-8-2009
San Juan River Bluff

Project #:

Project Manager:

Sampler: Cindy + Bob

On Ice: Yes No

Sample Temperature: [illegible]

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908443	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) Btex, MTBE only	8270 (Semi-VOA)	Alkalinity, CO_2				Air Bubbles (Y or N)
8-25-09	2:20	H_2O	Seep 3 Dup	3-VOA	HCl	4								~~X~~		X	~~X~~					
				1-liter	amber	4											X					
				1-125ml	H_2SO_4	4								X								
				1-500ml	—	4												X				
			Trip Blank			5																

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-25-09	3:05	Robert Krakow	[signature]	8/26/09	10:00
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Pg 2 of 2

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation

☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:

☒ Standard ☐ Rush ______

Project Name: SAN Juan River Bluff -outfalls- Annual - 8-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908309	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8260-MTBE, BTEX only	WQCC Dissolved Metals	Cation/Anion	Alkalinity/CO_2	Air Bubbles (Y or N)
8-18-09	130p	H_2O	Outfall #2	3-VOA	HCL	A 13 1												X				
				1-500ml	HNO_3	13 1							X									
				1-125ml	filtered HNO_3	13 1													X	X		
				1-125ml	H_2SO_4	13 1													X	X		
				1-250ml		13 1														X	X	
8-18-09	215p	H_2O	Outfall #3	3-VOA	HCL	14 2												X				
				1-500ml	HNO_3	14 2							X									
				1-125ml	filtered HNO_3	14 2													X	X		
				1-125ml	H_2SO_4	14 2													X	X		
				1-250ml		14 2														X	X	
			Trip Blank A			3																

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-18-09	247	Cindy Hurtado	[signature]	8/19/09	10:05
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: SanJuan River - Semi Annual - 4/09

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: Yes No

Sample Temperature: 3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904489	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX MTBE only	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion EC TDS	Alkalinity-Carbon Dioxide		Air Bubbles (Y or N)
4-13-09	150pm	H_2O	UpStream	5-VOA	HCL	1			X							X						
				2-125ml	HNO_3 filtered	1												X				
				1-500ml		1													X	X		
				1-125ml	H_2SO_4	1													X	X		
				1-500ml	HNO_3	1							X									
4-13-09	215pm	H_2O	DownStream	5-VOA	HCL	2			X							X						
				2-125ml	filtered HNO_3	2												X				
				1-500ml		2													X	X		
				1-125ml	H_2SO_4	2													X	X		
				1-500ml	HNO_3	2							X									

Date: 4-13-09 Time: 250pm Relinquished by: Cindy Hurtado

Received by: [signature] Date 4/14/09 Time 1012

Date: Time: Relinquished by:

Received by: Date Time

Remarks: page 1 of 2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: San Juan River - Semi Annual - 4/09

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: Yes No

Sample Temperature: 3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904189	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX, MTBE only	8270 (Semi-VOA)	WQCC Dissolved Metals	Cation/Anion EC TDS	Alkalinity - Carbon Dioxide		Air Bubbles (Y or N)
4-13-09	1030A	H2O	North of MW#45	5-VOA	HCL	3			X							X						
				2-125ml	filtered HNO3	3												X				
				1-500ml		3													X	X		
				1-125ml	H2SO4	3													X	X		
				1-500ml	HNO3	3							X									
4-13-09	1050A	H2O	North of MW#46	5-VOA	HCL	4			X							X						
				2-125ml	filtered HNO3	4												X				
				1-500ml		4													X	X		
				1-125ml	H2SO4	4													X	X		
				1-500ml	HNO3	4							X									

Date:	Time:	Relinquished by:	Received by:	Date	Time
4-13-09	250pm	Cindy Hurtado	[signature]	4/14/09	1012
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Page 2 of 2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: SAN Juan River - August-2009

Project #:

Project Manager:

Sampler: Cindy/Bob

On Ice: ☐ Yes ☐ No

Sample Temperature: 2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908359	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8260-BTEX, MTBE only	WQCC Dissolved Metals	Cation/Anion	Alkalinity	Air Bubbles (Y or N)
8-20-09	1130A	H2O	North of 46	6-VOA	HCL	1			X									X				
				1-500ml	HNO3	1							X									
				1-125ml	Filtered HNO3	1													X	X		
				1-125ml	H2SO4	1														X		
				1-250ml		1														X	X	
8-20-09	1145	H2O	North of 45	6-VOA	HCL	2			X									X				
				1-500ml	HNO3	2							X									
				1-125ml	Filtered HNO3	2													X	X		
				1-125ml	H2SO4	2														X		
				1-250ml		2														X	X	
8-20-09	1150	H2O	North of 45 FD	6-VOA	HCL	3			X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-20-09	245	Cindy Hurtado	[signature]	8/21/09	10:05
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: pg 1 of 2

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: San Juan River August - 2009

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908359	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8260 - BTEX MTBE only	WQCC Dissolved Metals	Cation/Anion	Alkalinity	Air Bubbles (Y or N)
8-20-09	130pm	H2O	UPSTREAM	5-VOA	HCL	4			X									X				
				1-500ml	HNO_3	4							X									
				1-125ml	HNO_3 filtered	4													X	X		
				1-125ml	H_2SO_4	4														X		
				1-250ml		4														X	X	
8-20-09	2pm	H2O	DOWNStream	6-VOA	HCL	5			X									X				
				1-500ml	HNO_3	5							X									
				1-125ml	HNO_3 filtered	5													X	X		
				1-125ml	H_2SO_4	5														X		
				1-250ml		5														X	X	
			Trip Blank			6																

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-20-09	245p	Cindy Hurtado		8/21/09	10:05
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: pg 2 of 2

If ne..., samples submitted to Hall Environmental may be subcontracted to other accredited laborat... this serves as notice of this possibility...

Chain-of-Custody Record

Client: Western Refining (Blmfld)

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#: 505632-3911

QA/QC Package:
- ☐ Standard
- ☑ Level 4 (Full Validation)
- ☐ Other
- ☐ EDD (Type)

Turn-Around Time:
- ☑ Standard
- ☐ Rush

Project Name: TK#33 JAN.5, 2009

Project #:

Project Manager:

Sampler: Cindy + Bob

On Ice ☑ Yes ☐ No

Sample Temperature: 4

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0901081	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) Btex, MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
01-05-09	145pm	H_2O	TK#33	3-VOA	HCl	1										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
1-6-09	1430	Robert Krakow		1/7/09	11:40
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining (Blmfld)

Mailing 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 2-2-09

Project #:

Project Manager:

Sampler: Bob

On Ice: ☑ Yes ☐ No

Sample Temperature: 2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0902022	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX, MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
2-2-09	9:15	H2O	TK#33	3-VOA	HCl	1										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
2-2-09	10:00	Robert Krakow		12:35	2/3/09
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

C[illegible]-of-Custody Record

Client: Western Refining (Blmfld)

Mailing 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 - 03/05/09

Project #:

Project Manager:

Sampler: Cindy / Bob

On Ice: ☒ Yes ☐ No

Sample Temperature:

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0903099	BTEX + MTBE + ~~TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)						Air Bubbles (Y or N)
3/05/09	1130A	H_2O	TK #33	3-VOA	HCL	-1	X																

Date:	Time:	Relinquished by:	Received by:	Date	Time
3/05/09	103pm	Cindy Hurtado	[illegible]	3/6/09	1000
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

450

Ch[illegible] of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4161

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: TK#33 April 1, 2009

Project #:

Project Manager:

Sampler: Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904037	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) Btex, MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
4-1-09	9:15	H_2O	TK#33	3-VOA	HCl	1										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
4-1-09	11:00	Robert Krakow	[signature]	4/2/09	10:00
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

C -of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation

☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:

☑ Standard ☐ Rush ______

Project Name: TK#33 5- -09

Project #:

Project Manager:

Sampler: Bob

On Ice: Yes No

Sample Temperature: 0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0905116	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) Btex, MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
5-5-09	8:25	H_2O	TK# 33	3-VOA	HCl	-1										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
5-6-09	2:30	Robert Krakow	[signature]	5/7/09	1000
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Cl of-Custody Record

Client: Western Refinery

Mailing 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)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: TK-33 June 2009

Project #:

Project Manager:

Sampler: Bob

On Ice: ☑ Yes ☐ No

Sample Temperature: [illegible]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0906082	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) Btex, MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
6-1-09	9:30	H_2O	TK-33	3-VOA	HCl	1										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
6-1-09	2:45	Robert Krakow	[signature]	6/2/09	12:00
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited labora... This serves as notice of this possibility...

C[illegible] of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: TK-33 July 1, 2009

Project #:

Project Manager:

Sampler: Bob

On Ice: ☑ Yes ☐ No

Sample Temperature: [illegible]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0907047	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX, MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
7-1-09	11:05	H_2O	TK 33	3-VOA	HCl	-1										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
7-1-09	2:30	Robert Krakow	[signature]	7/2/09	1015
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. [illegible]

Ch[illegible]of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation

☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:

☒ Standard ☐ Rush ______

Project Name:

TANK 33 8-3-09

Project #:

Project Manager:

Sampler: Bob

On Ice: ◯Yes ☐ No

Sample Temperature: 6.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0908051	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) Btex, MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
8-3-09	8:50	H_2O	TK#33	3-VOA	HCl	-1										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
8-4-09	2:50	Robert Krakow	[signature]	8/5/09	1040
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If n[illegible]ary, samples submitted to Hall Environmental may be subcontracted to other accredited labora[illegible] This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the [illegible]ical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:
☒ Standard ☐ Rush ______

Project Name: TK#33 9-8-2009

Project #:

Project Manager:

Sampler: Bob

On Ice ☒ Yes ☐ No

Sample Temperature [illegible]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0909[illegible]
9-8-09	11:15	H_2O	TK#33	3-VOA	HCl	-1

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)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) Btex, MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
									X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
9-8-09	2:30	Robert Krakow	[signature]	10:30	9/9/09
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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 10-1-09

Project #:

Project Manager:

Sampler: Bob

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0910013	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) Btex, MTBE	8270 (Semi-VOA)					Air Bubbles (Y or N)
10-1-09	7:30	H_2O	TK-33	3-VOA	HCl	-1										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
10-1-09	2:30	Robert Krakow	[signature]	10/2/09	1012
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation
☐ NELAP ☐ Other ______
☐ EDD (Type) ______

Turn-Around Time:
☑ Standard ☐ Rush ______

Project Name: TANK #33 11-17-09

Project #:

Project Manager:

Sampler: Bob

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No 0911375	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) Btex, MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
11-17-09	8:20	H_2O	TK#33	3-VOA	HCl	-1										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
11-18-09	1:30	Robert Krakow		11/20/09	1000
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

C ·-·-of-Custody Record

Client: Western Refining

Mailing 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)

Accreditation

☐ NELAP ☐ Other ______

☐ EDD (Type) ______

Turn-Around Time:

☑ Standard ☐ Rush ______

Project Name: TANK #33 12-2-09

Project #:

Project Manager:

Sampler: Bob

On Ice: Yes No

Sample Temperature: 3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0912063	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) Btex, MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
12-2-09	9:30	H2O	TK-33	3-VOA	HCl	1										X						

Date:	Time:	Relinquished by:	Received by:	Date	Time
2-2-09	11:00	Robert Krakow	[signature]	12/3/05	1020
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If ·ss: ·mples submitted to Hall Environmental may be subcontracted to other accredited labor· ·serves as notice of this possibility. Any sub-contracted data will be clearly notated on th· ·port.