1R - 464

Annual GW Mon. Report

Year: 2011

2011 ANNUAL GROUNDWATER MONITORING REPORT
VACUUM TO JAL 14" MAINLINE #5
LEA COUNTY, NEW MEXICO
PLAINS SRS NO.: 2003-00134
UL-A SECTION 2 T22S R37E
NMOCD # 1R – 0464

RECEIVED
APR 2 2012
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

PREPARED FOR

PLAINS MARKETING, L.P.

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HOUSTON, TEXAS 77002

PREPARED BY

EARTHCON℠

Environmental Challenges
BUSINESS SOLUTIONS

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PROJECT NO. 205069.00

MARCH 2012

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PLAINS
ALL AMERICAN

March 29, 2012

Mr. Edward Hansen
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Plains All American – 2011 Annual Monitoring Reports
4 Sites in Lea County, New Mexico

Dear Mr. Hansen:

Plains All American is an operator of crude oil pipelines and terminal facilities in the state of New Mexico. Plains All American actively monitors certain historical release sites exhibiting groundwater impacts, consistent with assessments and work plans developed in consultation with the New Mexico Oil Conservation Division (NMOCD). In accordance with the rules and regulations of the NMOCD, Plains All American hereby submits our Annual Monitoring reports for the following sites:

Vacuum to Jal 14" Mainline #3	1R-455	Section 35, T21S, R37E, Lea County
Vacuum to Jal 14" Mainline #5	1R-0464	Section 2, T22S, R37E, Lea County
DS Hugh	1R-0463	Section 26, T21S, R37E, Lea County
Hugh Gathering	AP-0041	Section 11, T21S, R37E, Lea County

Earthcon prepared these documents and has vouched for their accuracy and completeness, and on behalf of Plains All American, I have personally reviewed the documents and interviewed Earthcon personnel in order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that Plains All American submits the enclosed Annual Monitoring Reports for the above facilities.

If you have any questions or require further information, please contact me at (575) 441-1099.

Sincerely,

Jason Henry

Jason Henry
Remediation Coordinator
Plains All American

CC: Geoff Leking, NMOCD, Hobbs, NM

Enclosures

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1.0 INTRODUCTION AND OBJECTIVES

1.1 Objectives and Site Background

EarthCon Consultants, Inc. (EarthCon; formerly Premier Environmental Services, Inc.) has prepared this Annual Report (Report) on behalf of Plains Pipeline, L.P. (Plains) for the Vacuum to Jal 14" Mainline #5 (site), located in T22S, R37E, Section 2 of Lea County, New Mexico. The site is approximately two miles east of Eunice, New Mexico, and more specifically at latitude 32° 25' 39.006" N and longitude 103° 07' 43.155" W (**Figure 1**). The hydrocarbon impact at the site is the result of a 20-barrel crude oil release that occurred from the pipeline on May 23, 2003. The pipeline was owned by EOTT Energy, LLC (EOTT) at the time of the release, and is currently owned by Plains.

This report presents the data collected at the site during weekly groundwater gauging and phase separated hydrocarbon (PSH) recovery, and four quarterly groundwater sampling events conducted during 2011. The objective of the on-going quarterly groundwater sampling activities at the site is to monitor the concentration of chemicals of concern (COCs) in the affected groundwater. Weekly PSH recovery activities are conducted to remove residual crude oil.

EarthCon was retained by Plains early in 2006 to complete delineation and remediation activities at the Vacuum to Jal #5 site, SRS No. 2003-00134. According to the initial Response Notification (NMOCD Form C-141), Mr. Pat McCasland of Environmental Plus, Inc. (EPI) reported the release, on behalf of Mr. Frank Hernandez of EOTT Energy, LLC (EOTT), to the Mexico Oil Conservation Division (NMOCD) on May 23, 2003 at about 8:00 pm (a copy of the C-141 Release Notification Form was provided in the 2010 Annual Report Dated March 2011). The leak was apparently caused by internal or external corrosion. The line was being pressure tested when the leak occurred.

1.2 Previous Remedial Responses and Environmental Investigations

EPI oversaw the initial emergency response activities at the site in May and June of 2003. According to EPI documents, the May 2003 release resulted in surface impacts in two areas that required excavation. The larger of the two areas was an irregularly shaped area measuring approximately 200 feet by 40 feet, and affected a surface area of approximately 8,885 square feet. The smaller area was an L-shaped area located east of the southern most portion of the larger excavation that measured approximately 40 feet by 60 feet and affected a surface area of approximately 2,500 square ft. The EPI data also revealed the presence of a historical spill at the site identified by the presence of an asphaltine layer that affected an area in the central portion of the larger excavation directly under the existing pipelines (**Figure 2**).

Based on the information provided by Mr. McCasland and file correspondence between EPI and Plains, approximately 1,466 cubic yards of heavily impacted surface soils were transported off site for treatment at the Lea Station Land Farm in March 2004. The remaining excavated soil was spread out adjacent to the excavation. In March 2004, EPI installed four trenches in areas

of known hydrocarbon-impacted soils to further delineate depths of contamination and to determine if the base of the excavation was contaminated.

In January 2006, EarthCon collected twelve composite soil samples from the soils to define the concentration of hydrocarbons remaining in these soils. In March 2006, EarthCon oversaw the installation of six borings and subsequent monitor wells at the site. Following the installation of the six monitor wells, EarthCon began bi-weekly gauging, phase separated hydrocarbon (PSH) recovery and quarterly groundwater sampling activities at the site.

Based on the available soil and groundwater data, a *Soil Remediation Plan* was prepared and submitted to the NMOCD in May 2006. The objective of the *Soil Remediation Plan* was to excavate the highly affected soils and to isolate and control residual concentration of COCs in the soil and preventing them from further affecting the groundwater by placement of an impermeable liner at the base of the excavation. The *Soil Remediation Plan* was approved by the NMOCD in June 2006. During October and November 2006, EarthCon collected additional confirmation soil samples in the open excavations and supervised the completion of over excavation, installation of a liner and backfilling activities. The soil remediation activities such as over excavation, liner placement and backfilling activities were presented in the *Soil Closure Report* dated March 2007. As part of the groundwater investigation activities conducted at the site, EarthCon oversaw the installation of seven additional borings/wells in November 2006 to delineate hydrocarbons in the groundwater. Details associated with the comprehensive site investigation activities conducted in November and December 2006 were presented in the *Site Investigation and Annual Report,* dated March 2007.

These reports document attainment of the risk-based NMOCD approved cleanup objectives for soil established for this site. They also establish that the COCs in groundwater have been delineated. These reports were submitted to the NMOCD for final regulatory approval for closure of soil issues at this site, and a request made for a "No Further Action Required for Soil Remediation" letter from the NMOCD.

The groundwater remediation goals and the proposed remedial approach are discussed in a *Groundwater Work Plan* submitted to the NMOCD in December 2009. Monitored natural attenuation is the established remedial approach for this site along with source reduction activities including weekly PSH recovery and quarterly groundwater monitoring. During November and December 2006, an additional subsurface investigation to define the lateral extent of affected groundwater beneath the site was conducted that included the installation of four monitor wells (MW-4, MW-5, MW-6 and MW-7) and three additional recovery wells (RW-4, RW-5 and RW-6) to depths between 60 and 61 feet bgs.

1.3 Regulatory Framework

Based on standards outlined in New Mexico Water Quality Control Commission (WQCC), the remediation criteria for groundwater at the site are as follows:

COC	Limit (mg/L)
Benzene	0.010
Toluene	0.750
Ethylbenzene	0.750
Total Xylenes	0.620
PAHs[1,2]	0.03
Benzo-a-pyrene[2]	0.0007

1 – PAHs: Total naphthalenes plus monomethylnaphthalenes
2 – PAH remediation standards will be used as target concentrations only upon PSH removal.

In addition to using these concentrations as the target cleanup goals for groundwater at the site, PSH and dissolved-phase hydrocarbons removal will be an integral part of on-going remediation activities at the site.

1.4 Limitations

EarthCon has examined and relied upon the file information provided by Plains and Environmental Plus, Inc. (EPI). EarthCon has not conducted an independent examination of the information contained in the Plains files; furthermore, we assume the genuineness of the documents reviewed and that the information provided in these documents to be true and accurate. EarthCon has prepared this report using the level of care and professionalism in the industry for similar projects under similar conditions. EarthCon will not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time this report was prepared. EarthCon believes the conclusions stated herein are factual, but no guarantee is made or implied.

2.0 GROUNDWATER ASSESSMENT AND RESULTS

2.1 Groundwater Sample Methodology

Activities conducted at the Vac to Jal Mainline #5 site in 2011 primarily consisted of gauging wells for groundwater levels, determining the presence or absence of PSH, recovering PSH using hand bailing and submersible pumps in monitor wells. Groundwater sampling of wells not exhibiting PSH was completed to evaluate the extent of the dissolved-phase hydrocarbon plume.

Measurements of the depth to groundwater and product thickness in wells with hydrocarbon sheen or PSH were completed during the weekly PSH recovery and groundwater sampling events. Seven groundwater monitor wells (MW-1 through MW-7) and six recovery wells (RW-1 through RW-6) were gauged using an oil/water interface probe. The well locations are shown on **Figure 2**.

Groundwater level elevations and the presence of PSH (if any) were noted for each well. In cases where no measurable PSH was detected by the interface probe, the downhole sensor of the probe was examined for the presence of PSH upon removal from the well. Three recovery wells (RW-1, RW-2, and RW-3) contained a measurable PSH thickness or hydrocarbon sheen during 2011. Starting in the second quarter of 2008, all recovery wells and monitor well(s) with PSH or a PSH sheen were required to be sampled annually. Groundwater samples were collected from these wells in the second quarter of 2011. These annual groundwater samples were then analyzed for BTEX constituents. In addition, PAH groundwater samples were collected from well MW-1 on November 29, 2011 per the request from the New Mexico Oil Conservation Division (OCD).

Groundwater monitor wells not exhibiting PSH or hydrocarbon sheen were gauged monthly and sampled quarterly. After collecting and recording groundwater level, each well was purged with a clean electric submersible pump, and then groundwater samples were collected using a new dedicated disposable bailer.

Groundwater samples were poured directly from the disposable bailers into the appropriate laboratory-supplied sample containers. The sample containers were then packaged to prevent breakage, placed on ice in a cooler, and shipped to ALS Environmental of Houston, Texas for analysis. The groundwater samples were analyzed for BTEX by EPA Method SW 846-8021B and PAHs by EPA Method SW 8270.

2.2 Groundwater Gauging

Table 1 summarizes groundwater gauging (elevation and PSH thickness) measurements taken before each quarterly groundwater sampling event in 2011. In addition, weekly (or occasionally semi-weekly) groundwater elevation and PSH thickness measurements were recorded prior to and after PSH recovery from wells containing PSH (RW-1, RW-2, and RW-3). Monthly

measurements were also taken from all wells. Complete historical groundwater elevation and PSH thickness measurements since September 14, 2005 are presented in **Table 2**.

2.3 Groundwater Gradient and Flow Direction

Using the groundwater gauging data as described in **Section 2.2** and summarized in **Tables 1** and **2**, groundwater gradient maps were prepared and are included as **Figures 3A** through **3D**. The calculated groundwater gradient and estimated groundwater flow direction are based on the gauging data obtained on February 23, June 1, August 30, and November 28, 2011 (see **Table 1**). This indicates a relatively flat groundwater gradient with no significant fluctuations during 2011. The groundwater flow, based on the gauging data collected in monitor wells MW-4 and MW-7 during 2011, was trending south at an approximate average gradient of 0.0032 to 0.0034 feet across the site. The groundwater gradient and flow direction across the site during 2011 were similar to the gradient and direction observed during the previous four years.

2.4 Groundwater Analytical Results

Groundwater at the site was sampled on February 23, June 1, August 30, and November 28 during 2011. Groundwater samples were collected from monitor wells MW-1 through MW-7 and also RW-4 through RW6. These samples were analyzed for BTEX constituents using the United States Environmental Protection Agency (USEPA) Method 8021B. Groundwater samples were only collected in the second quarter from recovery wells RW-1, RW-2, and RW-3 due to the presence of PSH.

The 2011 analytical results are presented in **Table 3,** and **Table 2.1** below summarizes the COC concentrations in which a NMOCD Remediation Criteria exceedance was observed. COC concentrations reported in exceedance of NMOCD standards are marked in **bold**.

Table 2.1 2011 COC NMOCD Exceedances

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-1	02/23/11	1102701-04	**0.025**	<0.0010	<0.0010	<0.0030
RW-1	06/01/11	1106050-08	**0.066**	0.016	0.057	0.18
RW-2	06/01/11	1106050-09	**0.034**	0.038	0.051	0.14
RW-3	06/01/11	110650-10	**0.21**	0.2	0.18	0.39

Analytical results reported for the groundwater samples collected at MW-2 through MW-7, RW-4, RW-5, and RW-6 displayed BTEX constituent concentrations below laboratory Method Detection Limits (MDLs) for all four quarters. Analytical results show that MW-1 had exceeded the NMOCD criteria for Benzene during the first quarter. RW-1, RW-2, and RW-3 displayed Benzene concentrations above NMOCD standards and detections of Toluene, Ethylbenzene, and Total Xylenes above laboratory MDLs but below NMOCD remediation criteria.

A letter was received from the NMOCD on November 29, 2011 requesting a groundwater sample from MW-1 be analyzed on an annual basis for PAHs and a groundwater sample from RW-2 be analyzed on an annual basis for BTEX. As shown above, groundwater RW-2 was collected and analyzed for BTEX during the second quarter of 2011. Analytical results show that Benzene exceeded the NMOCD criteria. A sample from MW-1 was collected in December 2011 and analyzed for PAHs. No detections were observed in the analysis of PAHs from MW-1.

Groundwater analytical results for 2011 can be found in **Table 3** and all historical sampling results can be found in **Table 4**. PAH analytical results are presented in **Table 5**. Figures 4A through 4D depict the BTEX concentrations detected in groundwater from the wells for each of the four quarterly events. A copy of the laboratory analytical data package is included in **Appendix A**.

2.5 Groundwater Waste Disposal

Purge water from well sampling at wells MW-1 through MW-7 and recovery wells RW-1 through RW-6 is placed in the 1,100-gallon above ground storage tank. These liquids are vacuumed from the tank and transported offsite for disposal by Key Energy Services of Hobbs, New Mexico via vacuum truck service.

3.0 PSH RECOVERY

3.1 PSH Recovery Methodology

In addition to collecting groundwater samples, EarthCon performed weekly visits to the site to gauge and recover PSH from the six wells with measurable PSH or a PSH sheen (wells RW-1, RW-2, and RW-3). During each site visit, the wells were gauged for PSH and water level measurements to recover measurable PSH (see **Table 2**). Groundwater gauging and PSH recovery activities were completed on a weekly basis using submersible pumps, hand bailer and/or absorbent socks. Routine PSH recovery activities typically consisted of the removal of less than 1 gallon of PSH and 10 to 20 gallons of groundwater (with possible dissolved-phase hydrocarbons) from each well.

3.2 2011 PSH Recovery

During 2011, measurable PSH was observed in recovery wells RW-1 through RW-3. In general, decreasing trends in the PSH thickness data collected for these wells have been observed.

The PSH observed in recovery well RW-1 indicated a stable PSH thickness during 2011 ranging from 0.01 to 0.12 feet with an average of 0.03 feet. PSH measurements in recovery well RW-2 indicated a stable PSH thickness during 2011 ranging from 0.03 to 0.29 feet with an average of 0.12 feet. The PSH thickness in recovery well RW-3 has shown a slight increase starting in June of 2011. The PSH levels range from 0.02 to 0.35 feet with an average of 0.11 feet.

Weekly PSH recovery at the site in 2011 led to the removal of approximately 13.5 gallons of PSH and 1,077 gallons of groundwater containing dissolved phase hydrocarbons with entrained PSH from the three affected recovery wells. The PSH recovery process consists of pumping total fluids using electric pumps and manual recovery using bailers.

3.3 PSH Waste Generated

Purge water from PSH and affected groundwater recovery from recovery wells RW-1 through RW-3 is placed in the 1,100-gallon above ground storage tank. These liquids are vacuumed from the tank and transported offsite for disposal by Key Energy Services as previously described in **Section 2.5**.

4.0 MONITORED NATURAL ATTENUATION

4.1 Regulatory Framework for Monitored Natural Attenuation

Monitored Natural Attenuation (MNA) is defined by the New Mexico Environmental Department in 20.5.13 NMAC as "a methodology for remediation that relies upon a variety of naturally occurring chemical, physical and biological processes to achieve target concentrations in a manner that is equally as protective of public health, safety and welfare, and the environment as other methods and that is accompanied by a program of monitoring to document the progress and results of the above mentioned processes."

As part of the MNA process several lines of evidence need to be evaluated. The general lines of evidence are listed below:

- **Primary Lines of Evidence (PLOE):** Relies on use of historical groundwater data that demonstrate a clear trend of stable or decreasing COC concentrations over time and with distance away from the source at appropriate monitoring or sampling points.
- **Secondary Lines of Evidence (SLOE):** Uses geochemical indicators to document certain geochemical signatures or "footprints" in the groundwater that demonstrate (indirectly) the type of natural attenuation process(es) occurring at the affected property and the destruction of COCs; or uses distance-based/time-based/biodegradation rate calculations to demonstrate attenuation.
- **Other Lines of Evidence (OLOE):** Most often consists of predictive modeling studies and other lab/field studies that demonstrate an understanding of the natural attenuation process(es) occurring at the affected property and their effectiveness in controlling Protective Concentration Level Exceedance (PCLE) zone migration and decreasing COC concentrations.

4.2 Groundwater Plume Stability and Monitored Natural Attenuation

Benzene concentrations of 0.066, 0.034 and 0.21 mg/L, respectively, were detected in source area wells (RW-1, RW-2, and RW-3) from the June 2011 sampling event. Note this was the only sampling event of 2011 for these three wells. Since March 2006, all BTEX constituents have been either undetected or below NMOCD criteria in the samples collected from all three of the cross gradient wells (MW-2, RW-6, and MW-6).

The benzene concentrations reported from 2006 through 2011 for MW-1 (the closest monitor well downgradient of the soil removal areas) indicate an overall decrease in the benzene concentration. Most often, benzene concentrations reported for MW-1 have been below the NMOCD criteria or have not been detected. Since June 2011, benzene concentrations have been less than 0.001 mg/L or less than one-tenth of the NMOCD criteria. Toluene, ethylbenzene and total xylenes have been either undetected or below NMOCD criteria in the

MW-1 samples since March 2006. Since May 2007, all BTEX constituents have been either undetected or below NMOCD criteria in the samples collected from monitor well MW-7 (the well furthest downgradient of the soil removal areas).

Figures 5 through 10 depict iso-concentration maps of dissolved benzene in groundwater for the years 2006 trough 2011, respectively. These figures illustrate the significant decrease in the areal extent of the benzene plume over the past five years. Plume area reduction is discussed further in **Section 4.3**.

Plume stability analysis was completed for the data obtained from the years 2006 through 2011 to establish baseline benzene plume characteristics. Comparisons between the 2006 through 2011 plume characteristics indicate that there is a decrease in the areal extent of the plume. The calculated benzene plume mass and benzene plume average concentration for 2011 indicated a significant decrease compared to the plume characteristics calculated for 2010. The calculated benzene plume mass and benzene plume average concentration for 2010 indicated a slight increase compared to the plume characteristics calculated for 2006 through 2009. Additional sampling events will be necessary to complete a statistical evaluation of the data and establish trends in the plume characteristics calculated. Further details and the findings of the plume stability study are presented below in **Sections 4.2** and **4.3** and illustrated in **Figures 5** through **12**.

4.3 Groundwater Plume Stability and Concentration Trends

Plume stability analysis was completed from the dissolved benzene data obtained in 2006 through 2011. This analysis established the following calculated time-dependent trends for the benzene plume:

- Plume area (Refer to **Figure 11**);
- Average concentration (Refer to **Figure 11**);
- Dissolved benzene mass (Refer to **Figure 11**) and;
- The center of mass of the dissolved benzene (Refer to **Figure 12**)

The above characteristics were calculated for each event using numerical methods and engineering principles

Figure 11 illustrates the following:

- The 2011 plume area (0.59 acres) has been reduced by 28 percent since 2010 and has been reduced by nearly 54 percent from a 2007 high of 1.28 acres;
- The average benzene concentration has shown an overall decrease and;
- The 2011 dissolved benzene mass (0.13 pounds) has been reduced by over 84 percent since 2010 and has been reduced by 90 percent from a 2006 high of 1.31 pounds.

Figure 12 illustrates the following associated with the center of the benzene plume mass:

- It has shifted in a maximum range of only approximately 30 feet (up and down-gradient) over the past five years;
- It has not migrated more than 15 feet down-gradient of the most down-gradient edge of the soil removal area and;
- It has receded approximately 14 feet up-gradient between 2006 and 2011.

The plume stability analysis completed for the site includes the development of benzene concentration isopleth maps for the years 2006 through 2011. An average of the benzene concentrations reported in the four quarterly groundwater sampling events was used for all the wells with no PSH. Since the wells with PSH have been sampled only during the second quarter groundwater sampling events in 2006, 2007 2008, 2009, 2010, and 2011 the benzene concentrations reported during these six sampling events were used in the evaluation of plume characteristics. The plume characteristics such as plume area, average concentration, plume mass, and plume centers of mass were calculated for each event using numerical methods and engineering principles.

A summary of the plume characteristics such as the plume mass, plume area and average concentration of benzene in the plume are presented in **Figure 11**. The plume centers of mass for the six years are presented in **Figure 12**. A slight shift to the west of the plume center of mass was observed from 2010 to 2011. The benzene isopleths maps for 2006 through 2011 are presented in **Figures 5** through **10**, respectively.

The current area affected by the benzene plume, based on the quarterly groundwater data collected from wells with PSH in 2011 is approximately 25 percent less than that of 2008. The plume average concentration calculated for 2011 is 0.027 mg/L, compared to 0.238 mg/L calculated in 2008. The total mass of the benzene plume in 2011 is approximately 1.24 lbs lower than the total mass computed in 2008. **Table 4.1** below provides a summary of plume characteristics.

Table 4.1. Summary of Plume Stability Characteristics

Date	Area (Acres)	Average Conc. (µg/l)	Mass (lbs)
2006	1.09	126	1.31
2007	1.28	119	1.23
2008	0.85	119	0.83
2009	0.99	77	0.62
2010	0.82	124	0.83
2011	0.59	27	0.13

The benzene plume area computed from the isopleth maps indicate that the areal extent of the benzene plume at the site continues to decrease. In 2010, the plume average concentration and the plume mass indicate an increase compared to the years 2008 and 2009. The increase in plume average concentration and plume mass could be attributable to the increase in the benzene concentrations reported in the groundwater samples collected from wells RW-2 and RW-3. The increase in concentration could be due to a slight increase in the water levels at the site during the end of first quarter and through the second quarter of 2010, or due to entrained PSH in the groundwater samples. However, the plume concentration and plume mass trend during 2011 continues to decline.

5.0 CONCLUSIONS

5.1 Findings

During 2011, groundwater monitoring was conducted on a quarterly basis and PSH recovery continued weekly through manual bailing and use of electric pumps. This report documents the results of the quarterly groundwater sampling events on-going at the site, and the volume of PSH and dissolved phase hydrocarbon recovered in 2011. A summary of the results of these activities is as follows:

- PSH was identified in the three recovery wells RW-1, RW-2 and RW-3. The measured PSH thickness is observed to be in a general decreasing trend.
- Groundwater analytical results for wells without PSH show that BTEX concentrations remained below the NMOCD remediation criteria throughout 2011 with one exception, the concentration of benzene from the groundwater sample collected from monitor well MW-1 during the first quarter of 2011.
- The reduction in PSH thickness is attributable to the source reduction activities conducted at the site including the removal of affected soils in the surface and shallow subsurface soil and placement of liners in November 2006. Additionally, routine recovery of PSH and dissolved-phase hydrocarbons via use of submersible electric pumps or by manual bailing and natural attenuation has further reduced the mass of the hydrocarbon plume.
- A total volume of approximately 1,077 gallons of groundwater containing dissolved phase hydrocarbon and 13.5 gallons of entrained PSH were removed during 2011.
- Plume stability analysis was completed to establish benzene plume characteristics using the 2006 through 2011 benzene concentration data. The initial plume characteristics obtained from 2006 through 2011 indicated a decreasing benzene plume area, plume mass and average plume concentration. These plume characteristics when compared to the 2011 computed plume characteristics, indicate that the areal extent of the plume is shrinking.

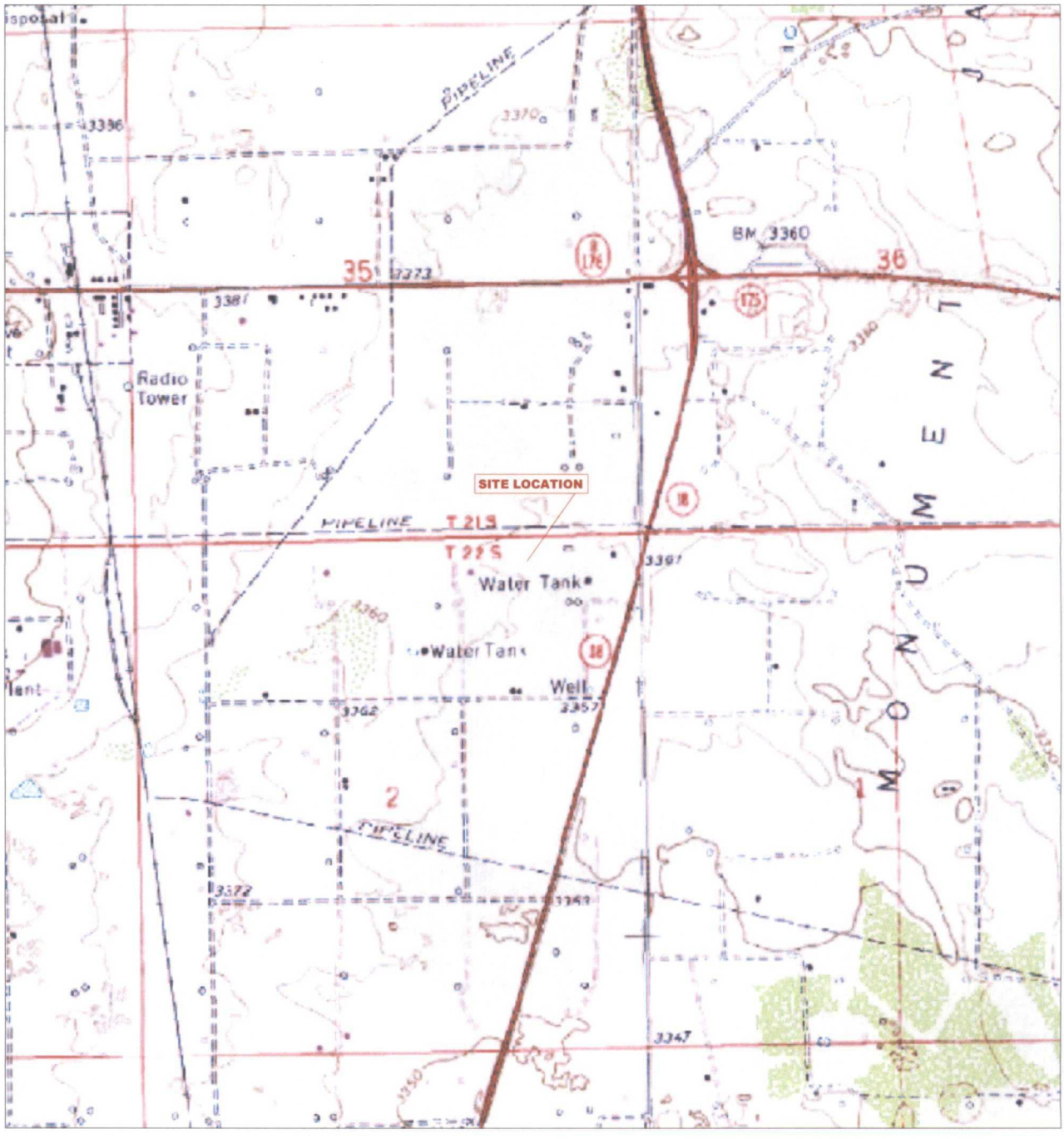
5.2 Recommendations

Based on PSH recovery and groundwater sampling completed during 2011 (and previously) at the site, EarthCon recommends the following:

- Continue weekly PSH recovery operations through removal of total fluids using manual bailers, electric pumps, and absorbent socks in wells with PSH as necessary, with monthly gauging and quarterly groundwater sampling to monitor hydrocarbons in groundwater.

- Continue to sample groundwater quarterly at wells not exhibiting PSH (MW-1 through MW-7 and RW-4 through RW-6).
- Continue to sample groundwater annually at wells with measurable PSH and/or a PSH sheen (RW-1, RW-2, and RW-3).
- Plume stability analysis and data evaluation will be completed for the quarterly data obtained during the 2012 sampling events. A statistical trend analysis will also be performed using Mann-Kendall Test and regression analysis on the calculated plume characteristics to assess statistical significance of the benzene plume stability trends observed. A summary of the updated plume stability study will be presented in the 2012 Annual Report.

FIGURES



Eunice Quadrangle
32°25'39"N Latitude & 103°07'43"W Longitude

1/2 1/4 0 1/4 1/2
Distance in Miles

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Figure 1
Site Location Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205069.00	DATE: 1/12

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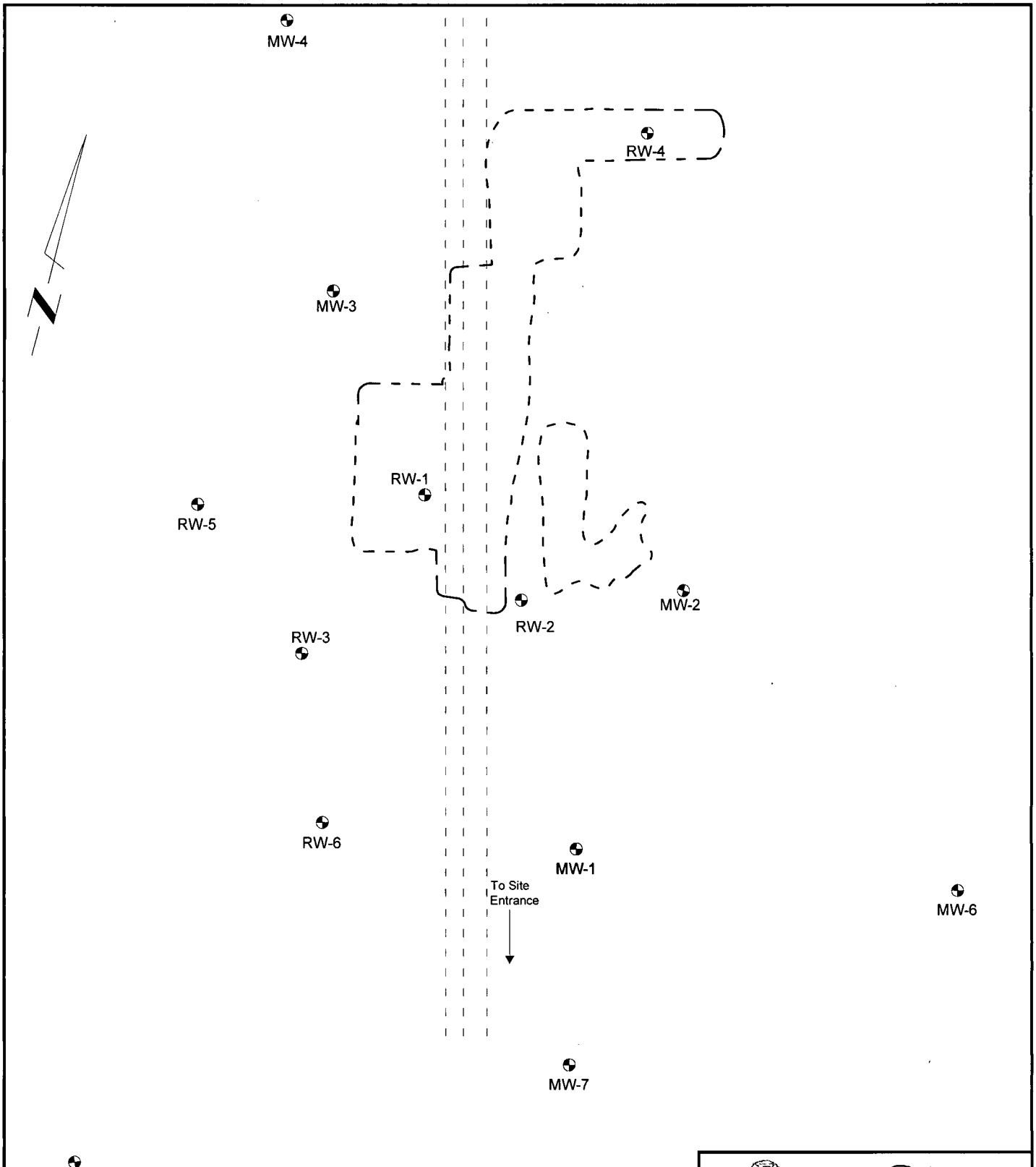

LEGEND:

- **MW** - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- - - - Burried Pipeline

0 60

FEET

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Environmental Challenges
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Figure 2
Site Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205069.00	DATE: 1/12

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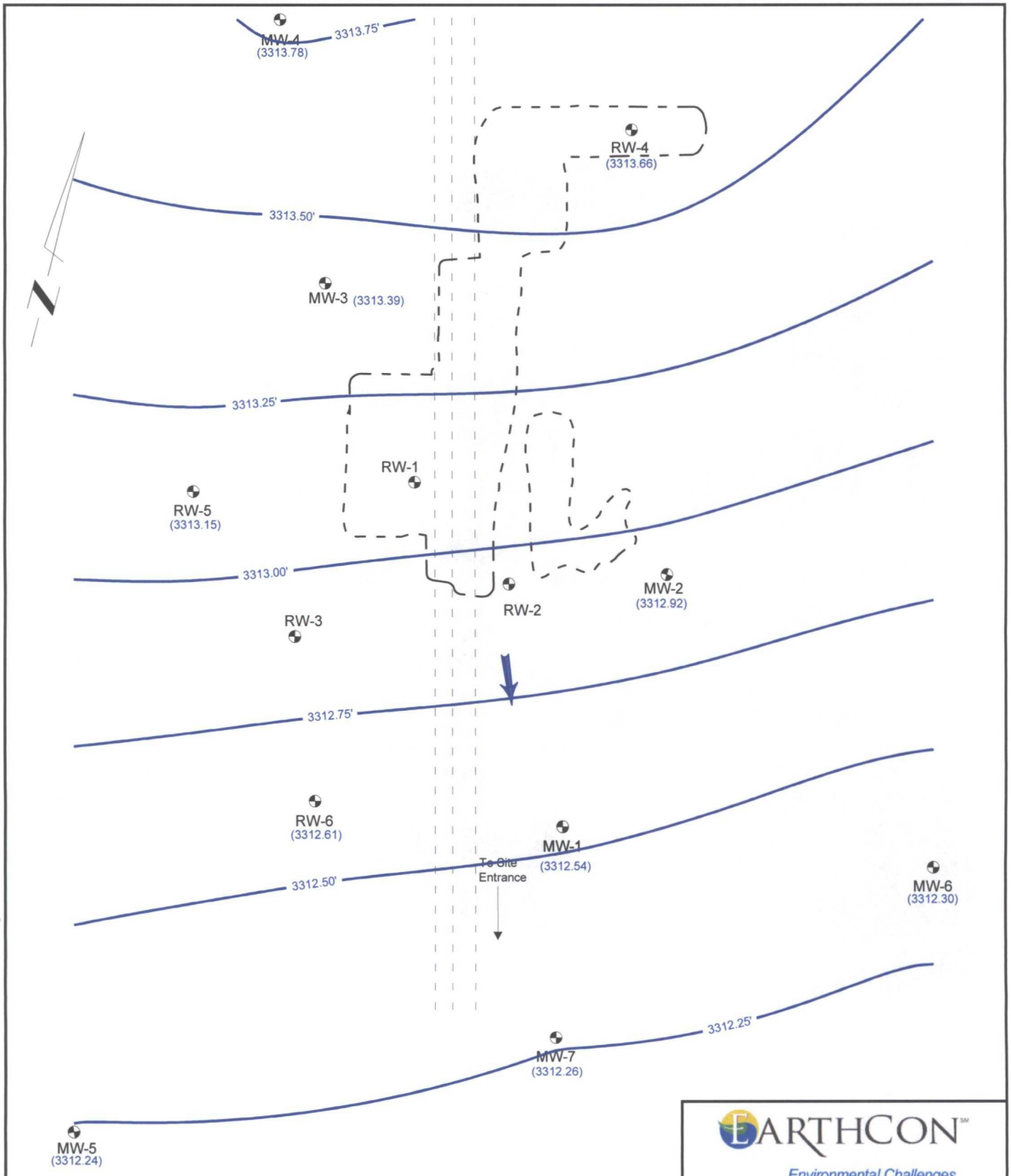

LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- - - - Burried Pipeline
- (3121.11) - Corrected Ground Water Elevation, ft.
- 3321.00 - Ground Water Elevation Contour, ft. Contour Interval=0.25 ft.
- → - Apparent Ground Water Flow Direction

Note: RW-1, RW-2, and RW-3 are not used to prepare the contours.

0 60
FEET

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Figure 3A
1st Quarter 2011 - Groundwater Gradient Map
February 23, 2011
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205069.00 | DATE: 1/12

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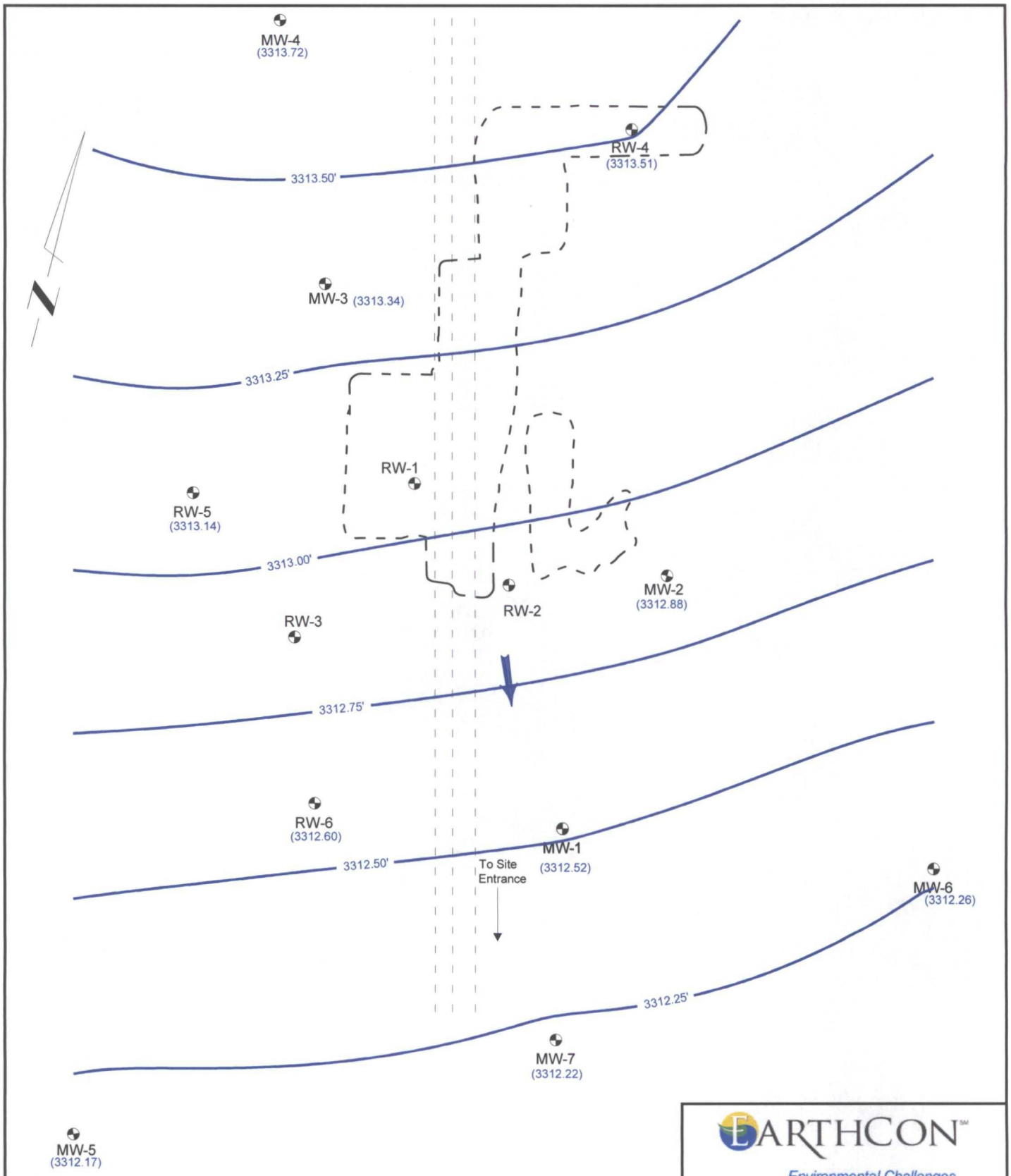

LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- - - - Burried Pipeline
- (3121.11) - Corrected Ground Water Elevation, ft.
- −3321.00− - Ground Water Elevation Contour, ft. Contour Interval=0.25 ft.
- → - Apparent Ground Water Flow Direction

Note: RW-1, RW-2, and RW-3 are not used to prepare the contours.

0 60
FEET

EARTHCON℠
Environmental Challenges
BUSINESS SOLUTIONS

Figure 3B
2nd Quarter 2011 - Groundwater Gradient Map
June 1, 2011
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205069.00 | DATE: 1/12

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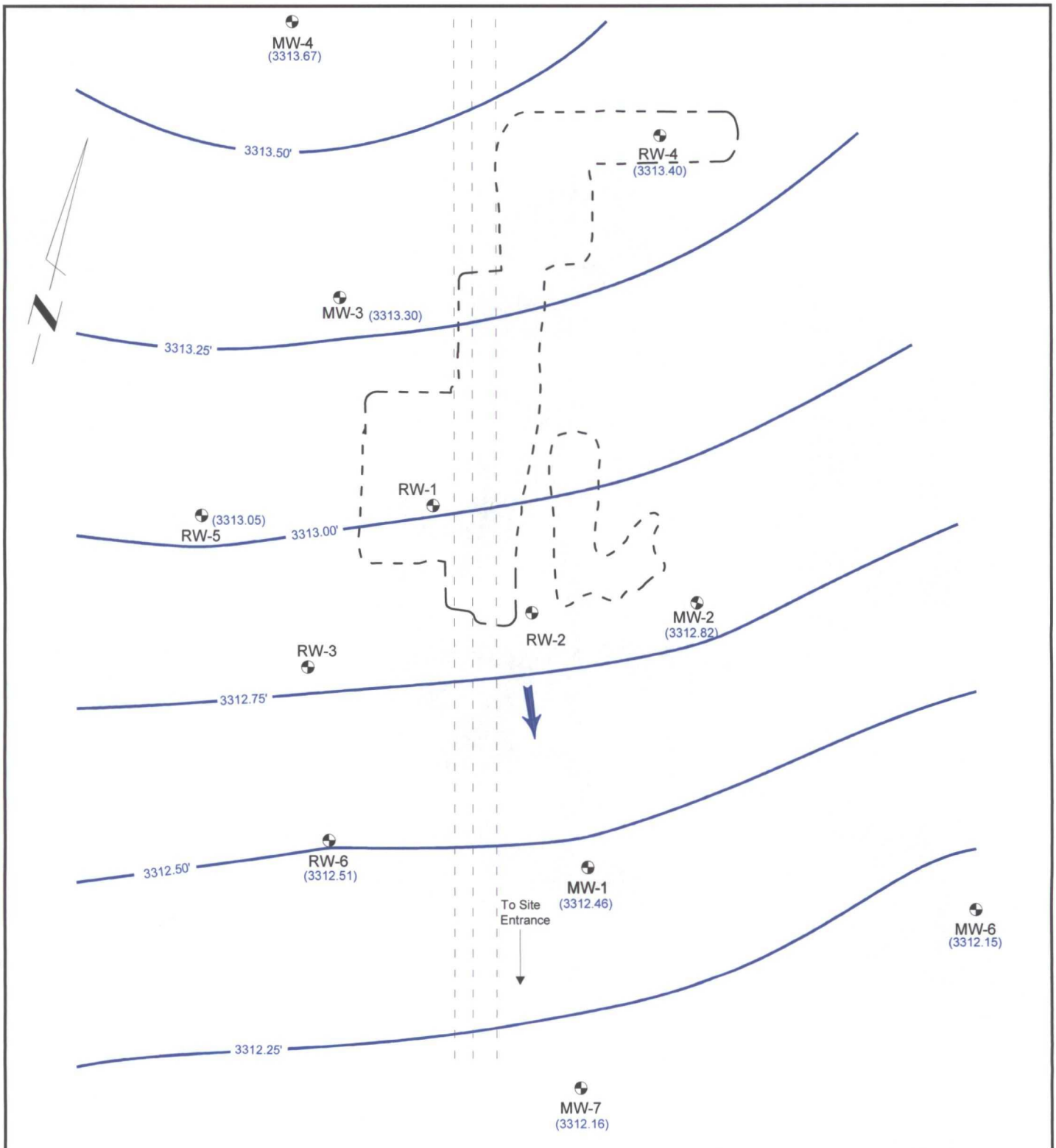

LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- - - - Burried Pipeline
- (3121.11) - Corrected Ground Water Elevation, ft.
- 3321.00 - Ground Water Elevation Contour, ft. Contour Interval=0.25 ft.
- → - Apparent Ground Water Flow Direction

Note: RW-1, RW-2, and RW-3 are not used to prepare the contours.

0 60
FEET

EARTHCON℠
Environmental Challenges
BUSINESS SOLUTIONS

Figure 3C
3rd Quarter 2011 - Groundwater Gradient Map
August 30, 2011
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205069.00 | DATE: 1/12

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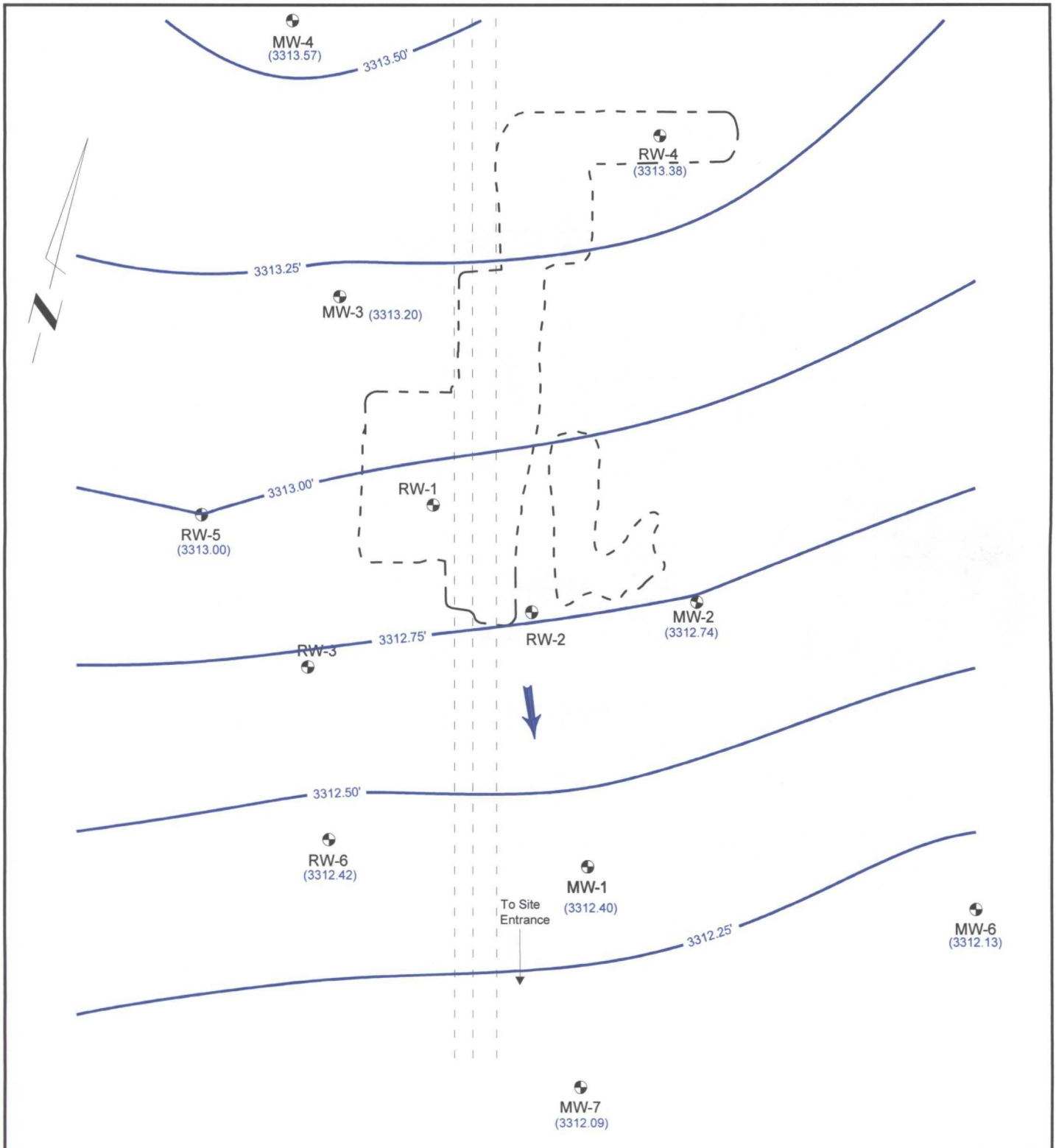

LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- - - - Burried Pipeline
- (3121.11) - Corrected Ground Water Elevation, ft.
- −3321.00− - Ground Water Elevation Contour, ft. Contour Interval=0.25 ft.
- → - Apparent Ground Water Flow Direction

Note: RW-1, RW-2, and RW-3 are not used to prepare the contours.

0 60
FEET

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Environmental Challenges
BUSINESS SOLUTIONS

Figure 3D
4th Quarter 2011 - Groundwater Gradient Map
November 28, 2011
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205069.00 | DATE: 1/12

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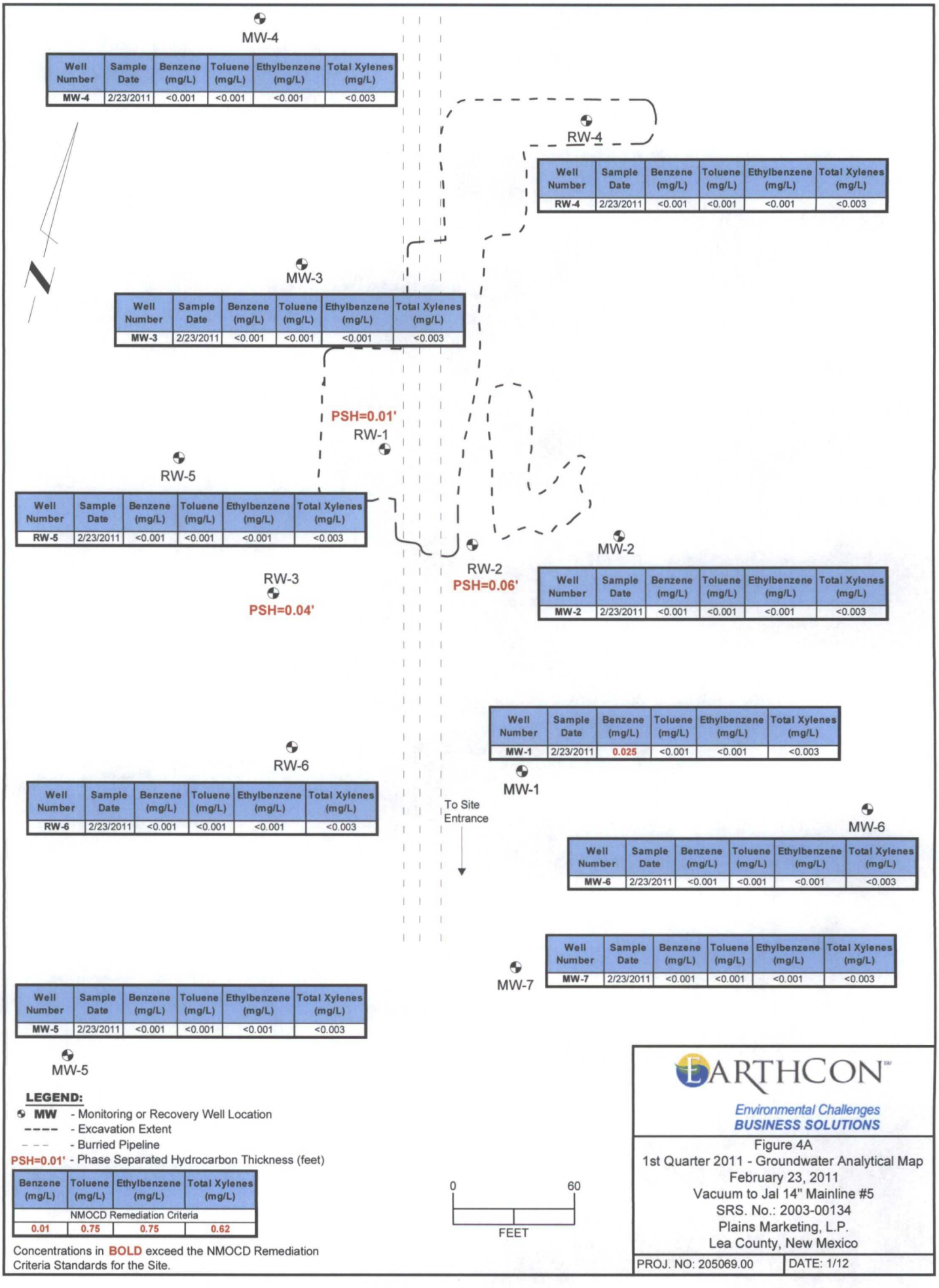

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	2/23/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-4	2/23/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	2/23/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-5	2/23/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	2/23/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-1	2/23/2011	0.025	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-6	2/23/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	2/23/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	2/23/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	2/23/2011	<0.001	<0.001	<0.001	<0.003

LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- - - - Buried Pipeline
- PSH=0.01' - Phase Separated Hydrocarbon Thickness (feet)

Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
NMOCD Remediation Criteria			
0.01	0.75	0.75	0.62

Concentrations in **BOLD** exceed the NMOCD Remediation Criteria Standards for the Site.

EARTHCON

Environmental Challenges
BUSINESS SOLUTIONS

Figure 4A
1st Quarter 2011 - Groundwater Analytical Map
February 23, 2011
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205069.00 | DATE: 1/12

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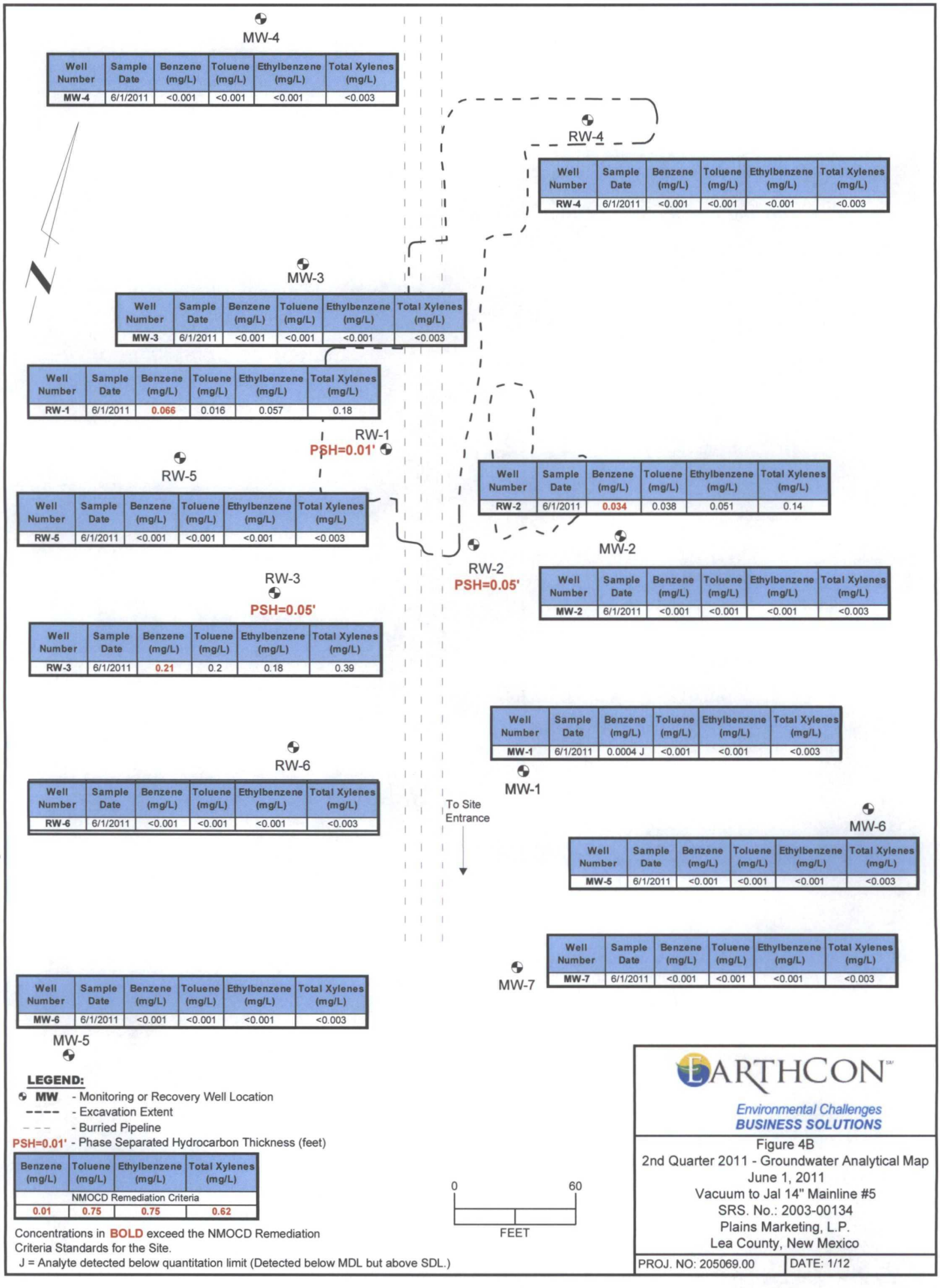

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	6/1/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-4	6/1/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	6/1/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-1	6/1/2011	**0.066**	0.016	0.057	0.18

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-5	6/1/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-2	6/1/2011	**0.034**	0.038	0.051	0.14

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	6/1/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-3	6/1/2011	**0.21**	0.2	0.18	0.39

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-1	6/1/2011	0.0004 J	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-6	6/1/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	6/1/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	6/1/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	6/1/2011	<0.001	<0.001	<0.001	<0.003

LEGEND:

- **MW** - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- - - - Burried Pipeline

PSH=0.01' - Phase Separated Hydrocarbon Thickness (feet)

Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
NMOCD Remediation Criteria			
0.01	0.75	0.75	0.62

Concentrations in **BOLD** exceed the NMOCD Remediation Criteria Standards for the Site.

J = Analyte detected below quantitation limit (Detected below MDL but above SDL.)

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Environmental Challenges
BUSINESS SOLUTIONS

Figure 4B
2nd Quarter 2011 - Groundwater Analytical Map
June 1, 2011
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205069.00 | DATE: 1/12

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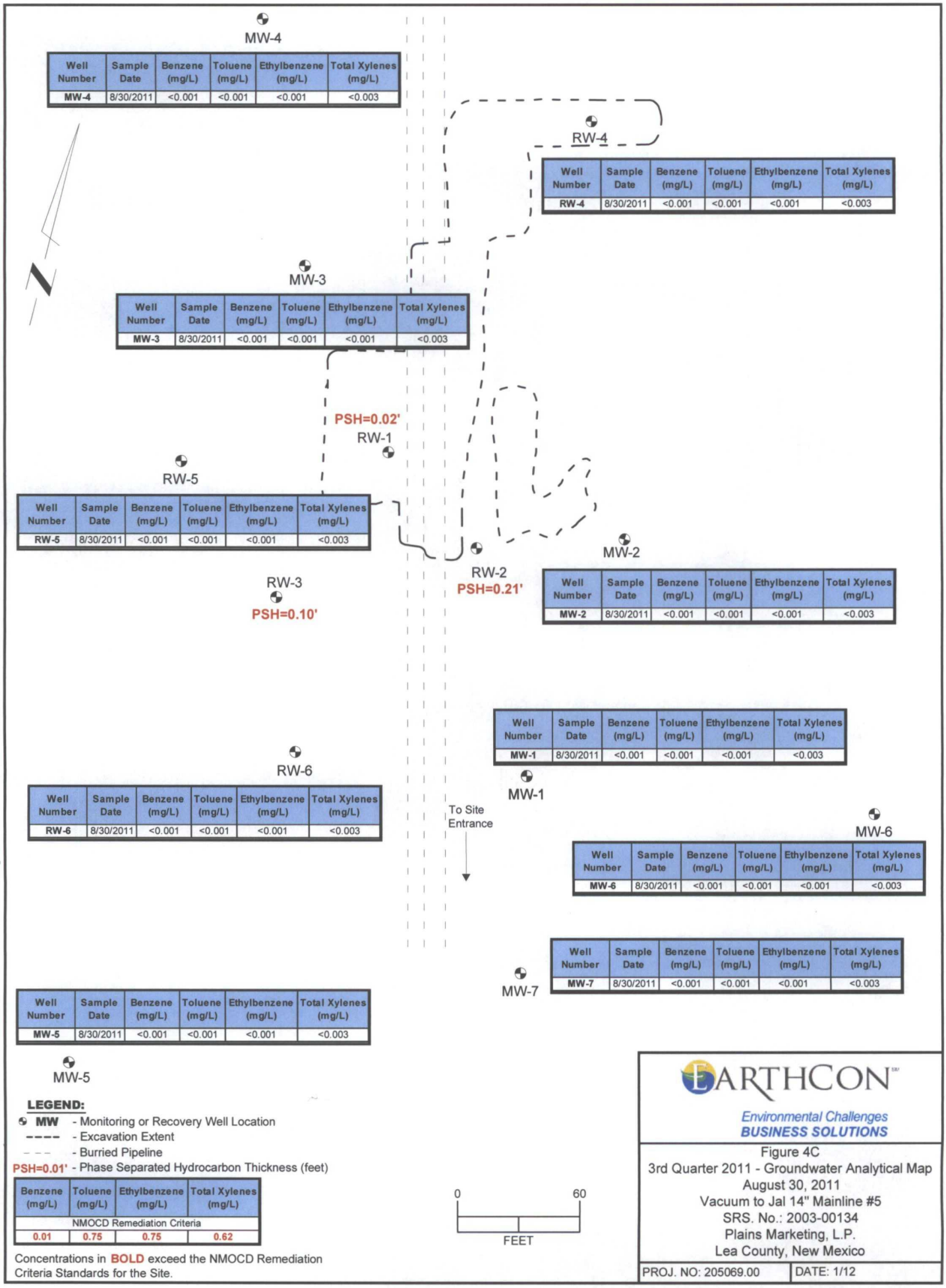

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	8/30/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-4	8/30/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	8/30/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-5	8/30/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	8/30/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-1	8/30/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-6	8/30/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	8/30/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	8/30/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	8/30/2011	<0.001	<0.001	<0.001	<0.003

LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- - - - Buried Pipeline
- PSH=0.01' - Phase Separated Hydrocarbon Thickness (feet)

Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
NMOCD Remediation Criteria			
0.01	0.75	0.75	0.62

Concentrations in **BOLD** exceed the NMOCD Remediation Criteria Standards for the Site.

0 60
FEET

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Environmental Challenges
BUSINESS SOLUTIONS

Figure 4C
3rd Quarter 2011 - Groundwater Analytical Map
August 30, 2011
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205069.00 | DATE: 1/12

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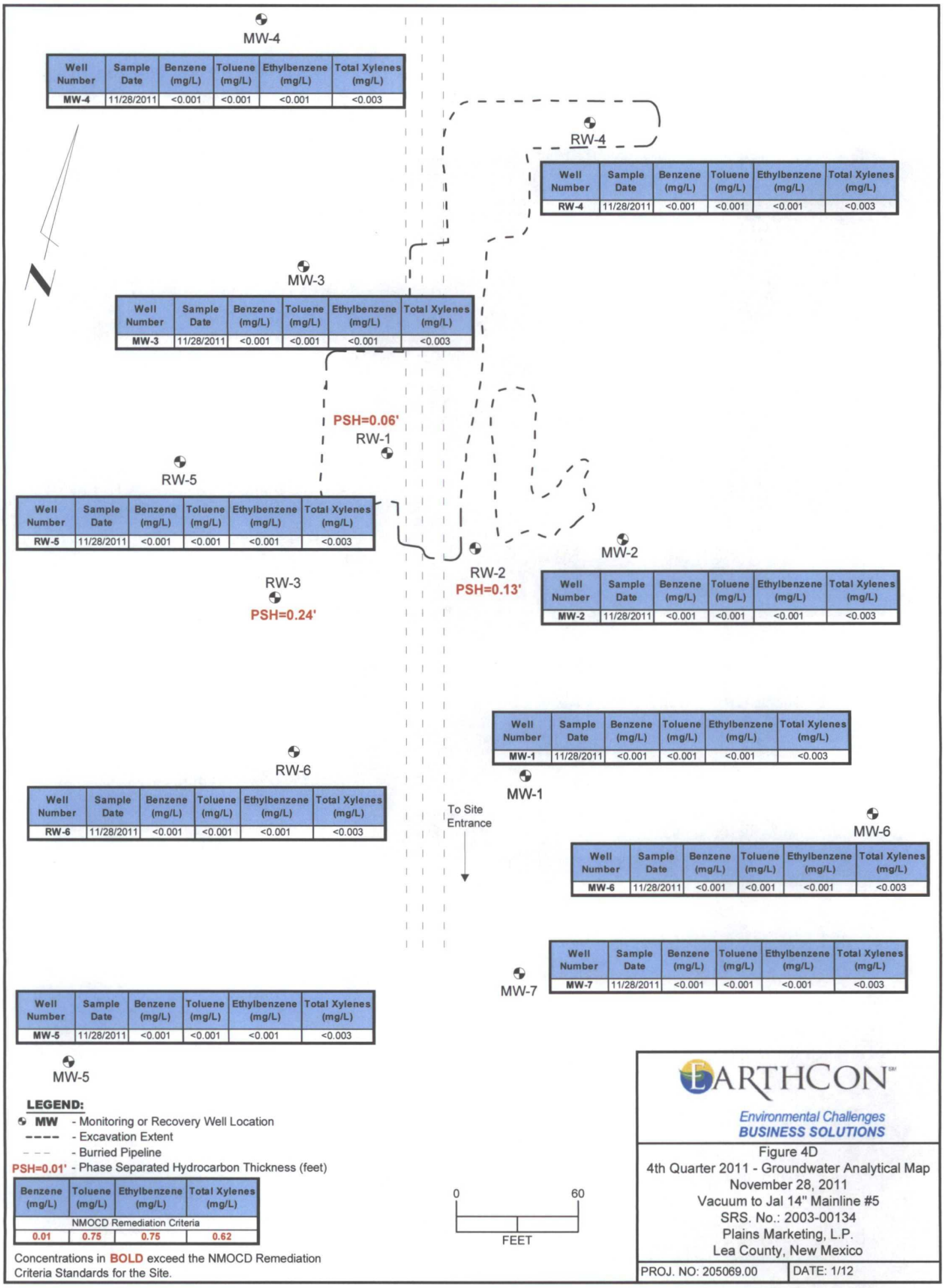

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	11/28/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-4	11/28/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	11/28/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-5	11/28/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	11/28/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-1	11/28/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-6	11/28/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	11/28/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	11/28/2011	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	11/28/2011	<0.001	<0.001	<0.001	<0.003

LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- - - - Buried Pipeline
- PSH=0.01' - Phase Separated Hydrocarbon Thickness (feet)

Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
NMOCD Remediation Criteria			
0.01	0.75	0.75	0.62

Concentrations in **BOLD** exceed the NMOCD Remediation Criteria Standards for the Site.

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Environmental Challenges
BUSINESS SOLUTIONS

Figure 4D
4th Quarter 2011 - Groundwater Analytical Map
November 28, 2011
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Marketing, L.P.
Lea County, New Mexico

PROJ. NO: 205069.00 | DATE: 1/12

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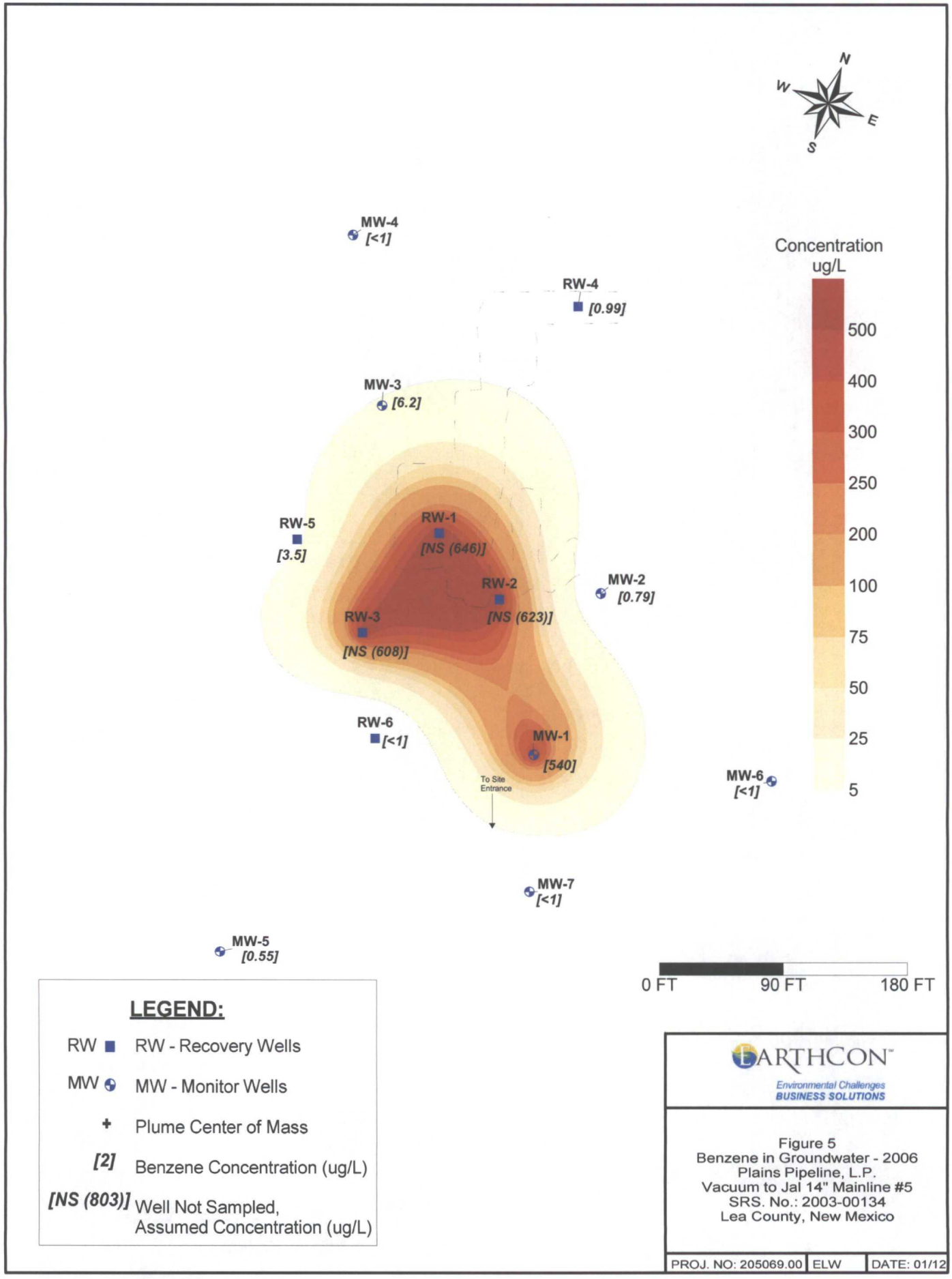

LEGEND:

RW ■	RW - Recovery Wells
MW ◓	MW - Monitor Wells
+	Plume Center of Mass
[2]	Benzene Concentration (ug/L)
[NS (803)]	Well Not Sampled, Assumed Concentration (ug/L)

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Environmental Challenges
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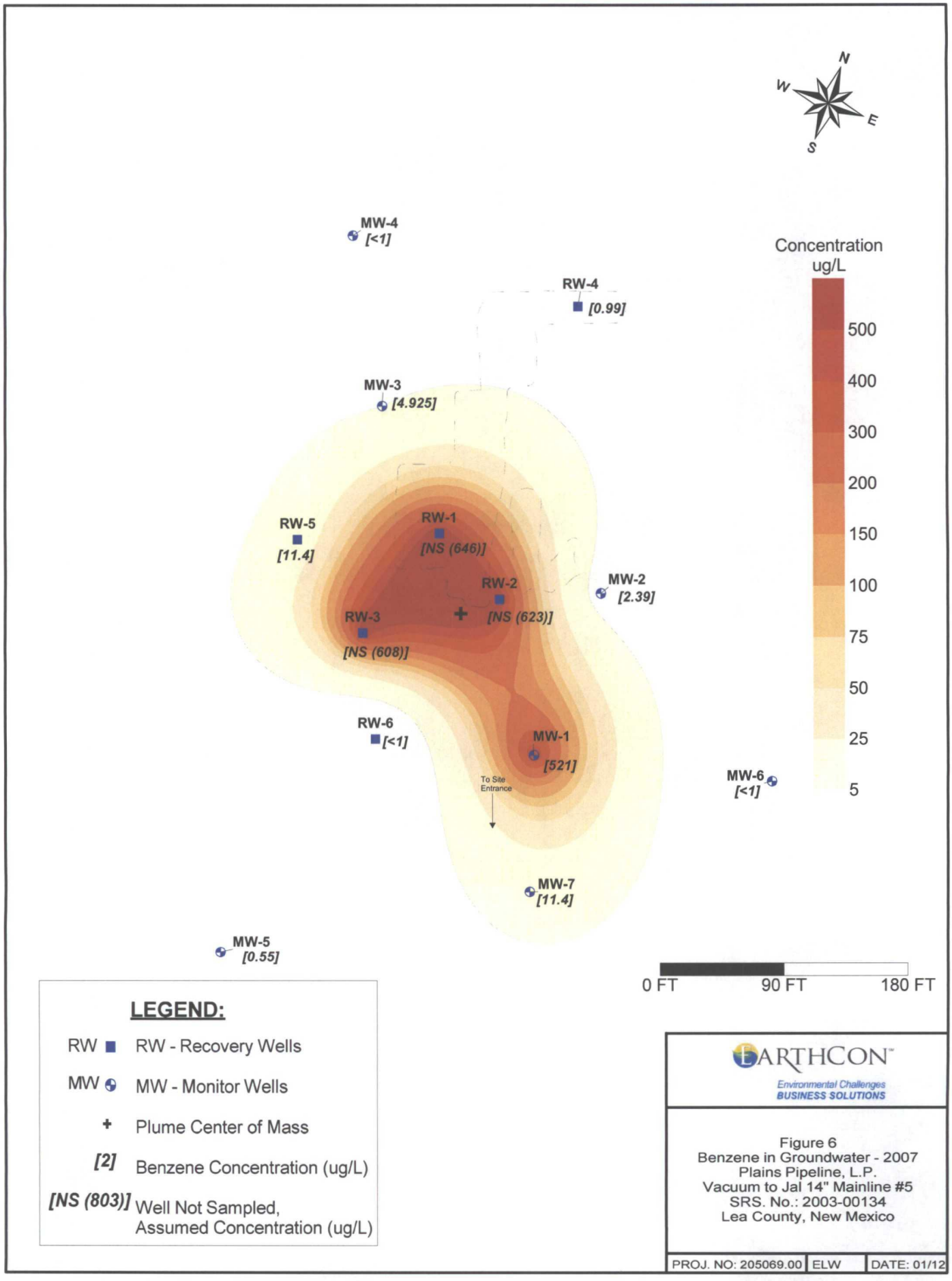
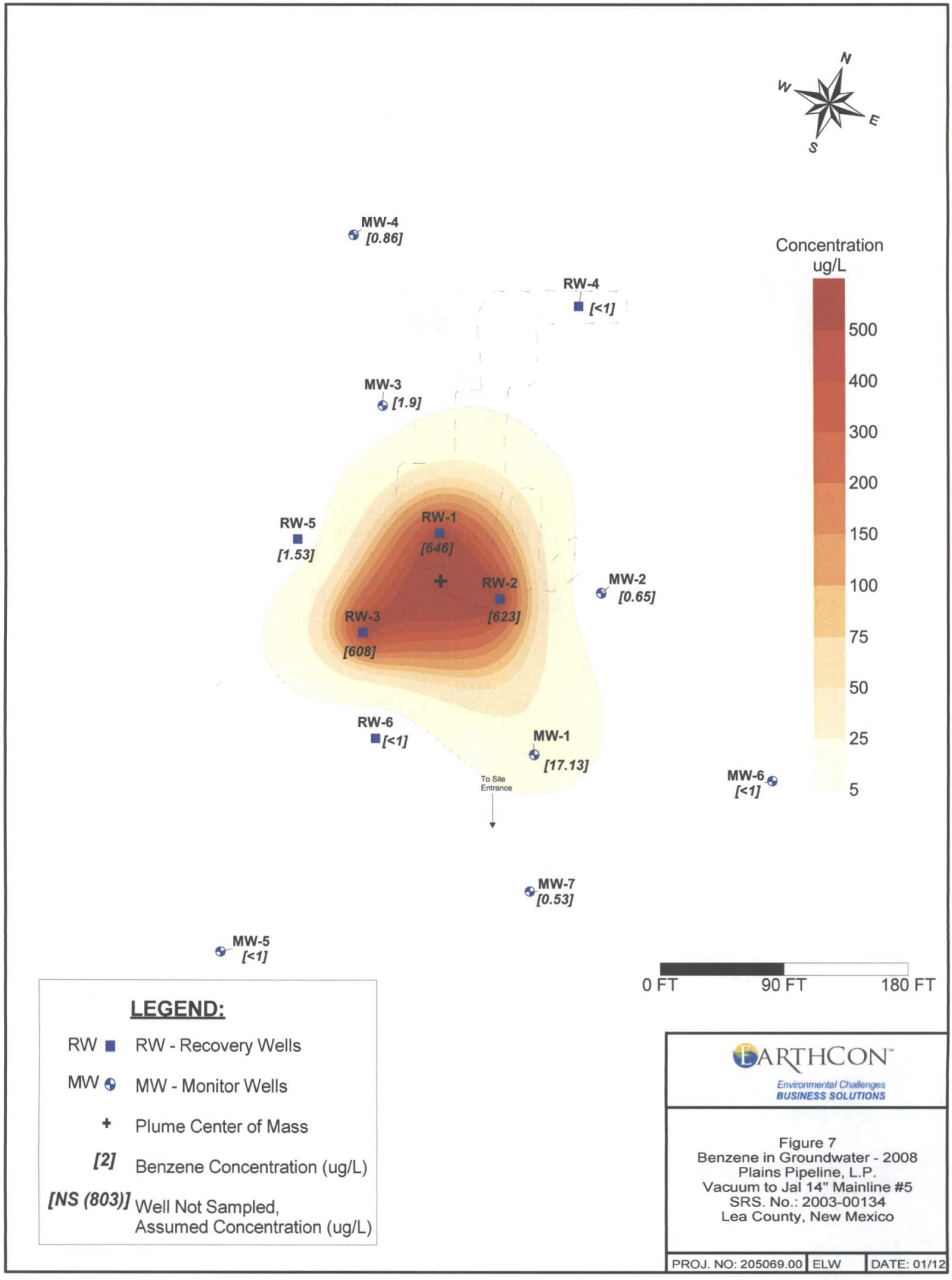
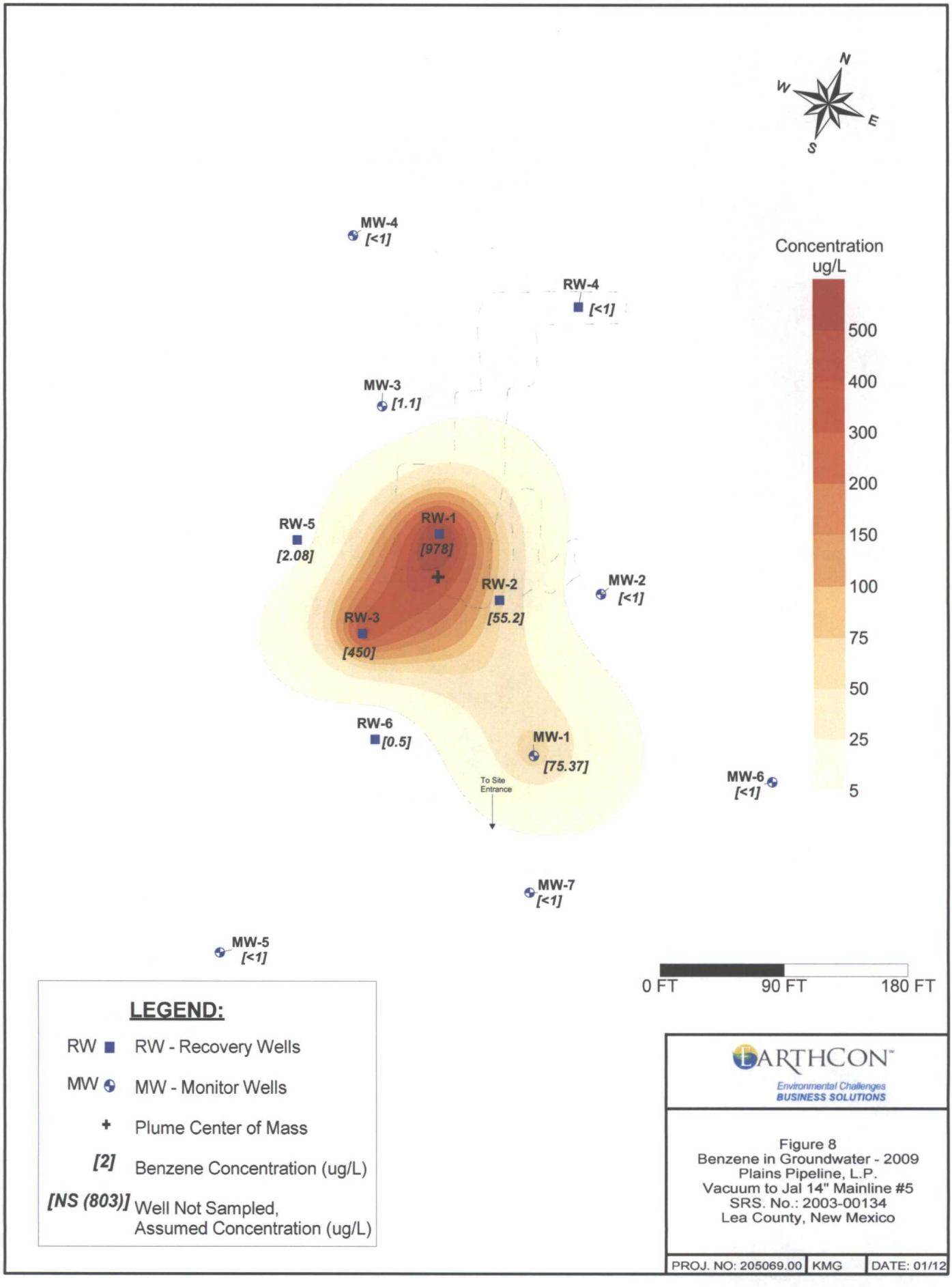
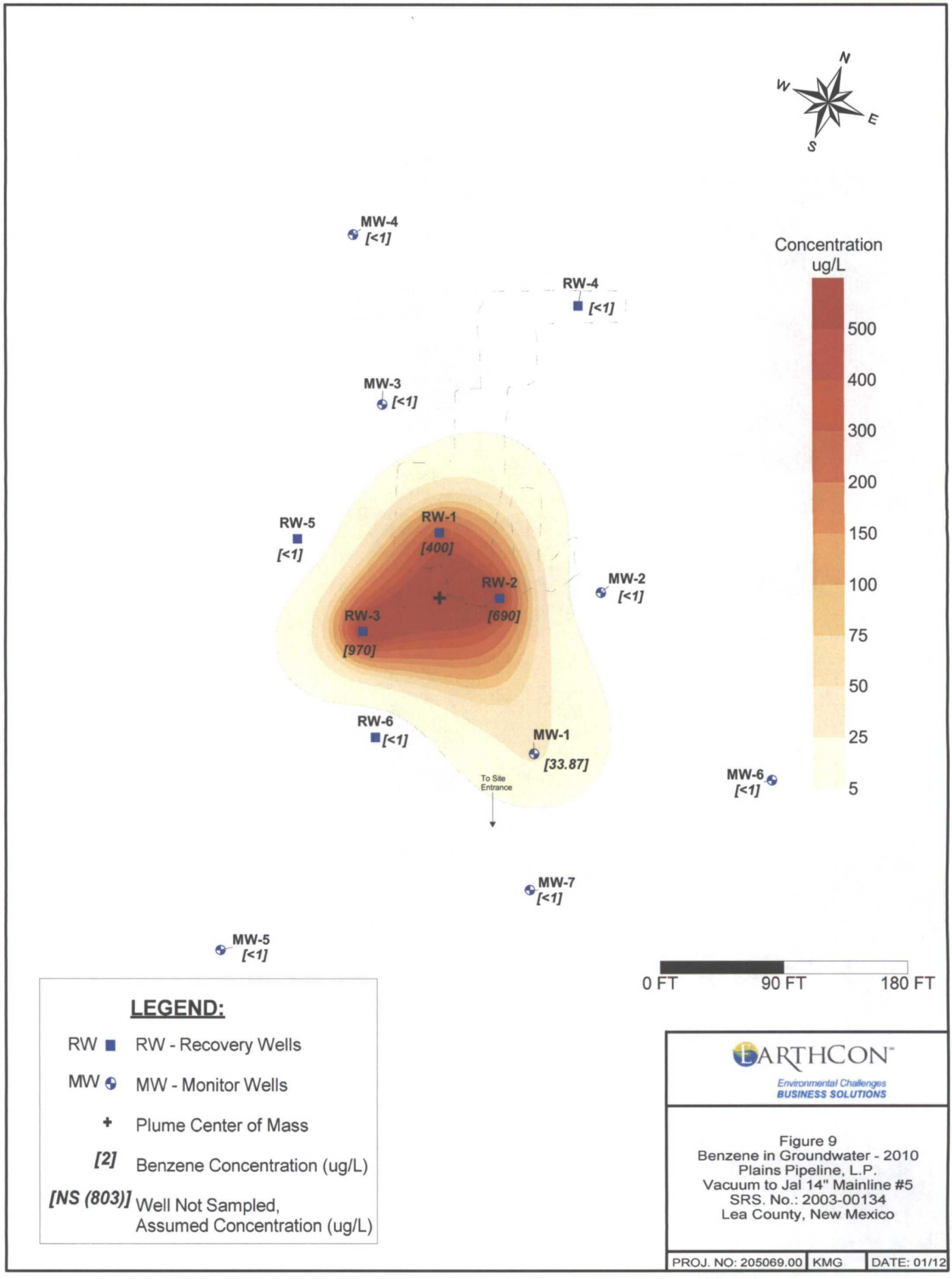
Figure 5
Benzene in Groundwater - 2006
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico

PROJ. NO: 205069.00	ELW	DATE: 01/12


N
W
E
S
MW-4
[<1]
RW-4
[0.99]
MW-3
[4.925]
RW-5
[11.4]
RW-1
[NS (646)]
RW-2
[NS (623)]
RW-3
[NS (608)]
MW-2
[2.39]
RW-6
[<1]
MW-1
[521]
To Site Entrance
MW-6
[<1]
MW-7
[11.4]
MW-5
[0.55]
Concentration ug/L
500
400
300
200
150
100
75
50
25
5
0 FT
90 FT
180 FT
LEGEND:
RW RW - Recovery Wells
MW MW - Monitor Wells
+ Plume Center of Mass
[2] Benzene Concentration (ug/L)
[NS (803)] Well Not Sampled, Assumed Concentration (ug/L)
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 6
Benzene in Groundwater - 2007
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico
PROJ. NO: 205069.00
ELW
DATE: 01/12


N
W
E
S
MW-4
[0.86]
RW-4
[<1]
MW-3
[1.9]
RW-5
[1.53]
RW-1
[646]
RW-2
[623]
RW-3
[608]
MW-2
[0.65]
RW-6
[<1]
MW-1
[17.13]
To Site
Entrance
MW-6
[<1]
MW-7
[0.53]
MW-5
[<1]
Concentration
ug/L
500
400
300
200
150
100
75
50
25
5
0 FT
90 FT
180 FT
LEGEND:
RW - RW - Recovery Wells
MW - MW - Monitor Wells
+ Plume Center of Mass
[2] Benzene Concentration (ug/L)
[NS (803)] Well Not Sampled, Assumed Concentration (ug/L)
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 7
Benzene in Groundwater - 2008
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico
PROJ. NO: 205069.00
ELW
DATE: 01/12


N
W
E
S
MW-4
[<1]
RW-4
[<1]
MW-3
[1.1]
RW-5
[2.08]
RW-1
[978]
RW-2
[55.2]
MW-2
[<1]
RW-3
[450]
RW-6
[0.5]
MW-1
[75.37]
To Site
Entrance
MW-6
[<1]
MW-7
[<1]
MW-5
[<1]
Concentration
ug/L
500
400
300
200
150
100
75
50
25
5
0 FT
90 FT
180 FT
LEGEND:
RW - RW - Recovery Wells
MW - MW - Monitor Wells
+ Plume Center of Mass
[2] Benzene Concentration (ug/L)
[NS (803)] Well Not Sampled, Assumed Concentration (ug/L)
EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS
Figure 8
Benzene in Groundwater - 2009
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico
PROJ. NO: 205069.00
KMG
DATE: 01/12



LEGEND:

RW ■	RW - Recovery Wells
MW ◓	MW - Monitor Wells
+	Plume Center of Mass
[2]	Benzene Concentration (ug/L)
[NS (803)]	Well Not Sampled, Assumed Concentration (ug/L)

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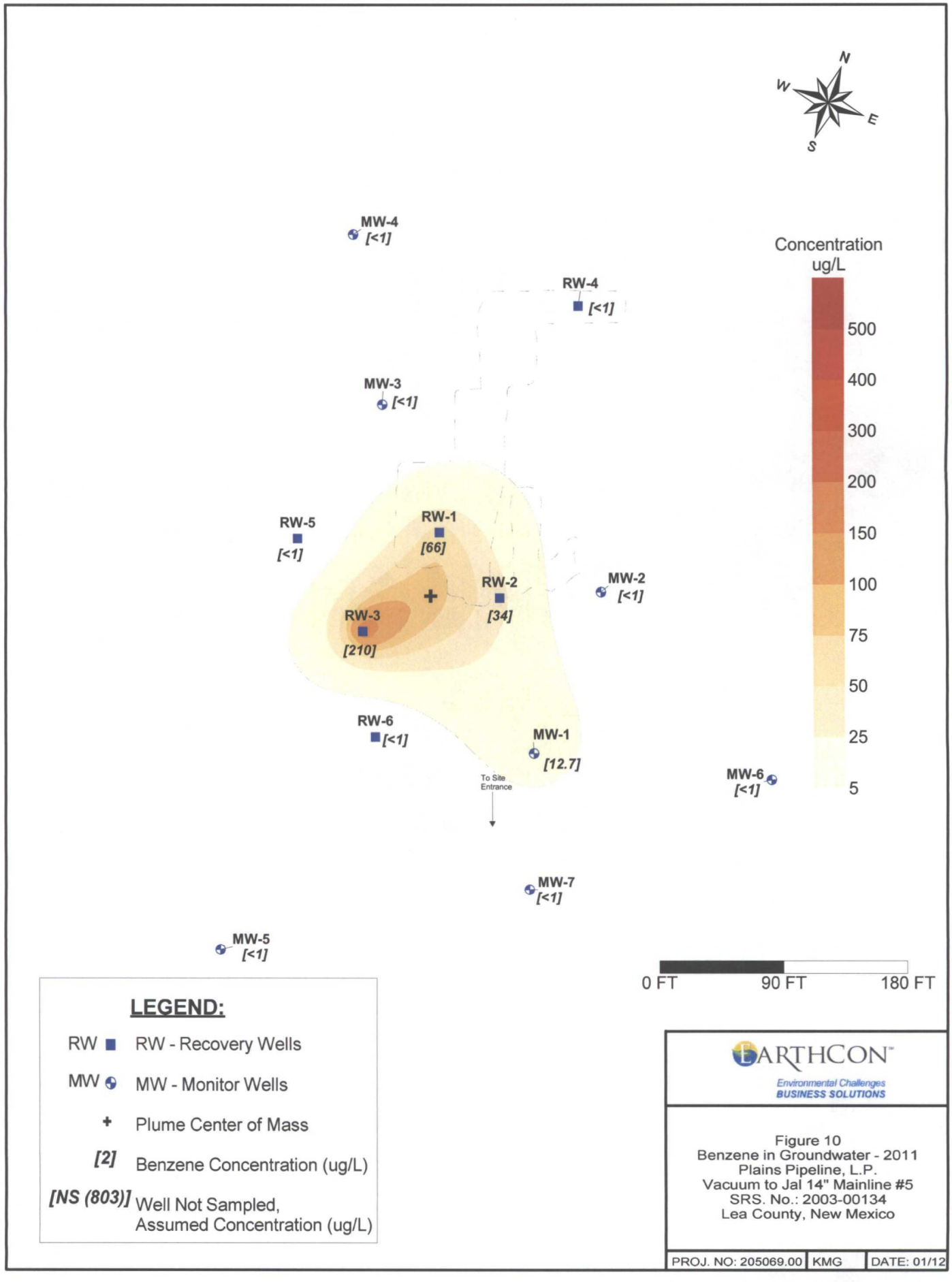
Environmental Challenges
BUSINESS SOLUTIONS

Figure 9
Benzene in Groundwater - 2010
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico

PROJ. NO: 205069.00	KMG	DATE: 01/12



LEGEND:

RW ■	RW - Recovery Wells
MW ◓	MW - Monitor Wells
+	Plume Center of Mass
[2]	Benzene Concentration (ug/L)
[NS (803)]	Well Not Sampled, Assumed Concentration (ug/L)

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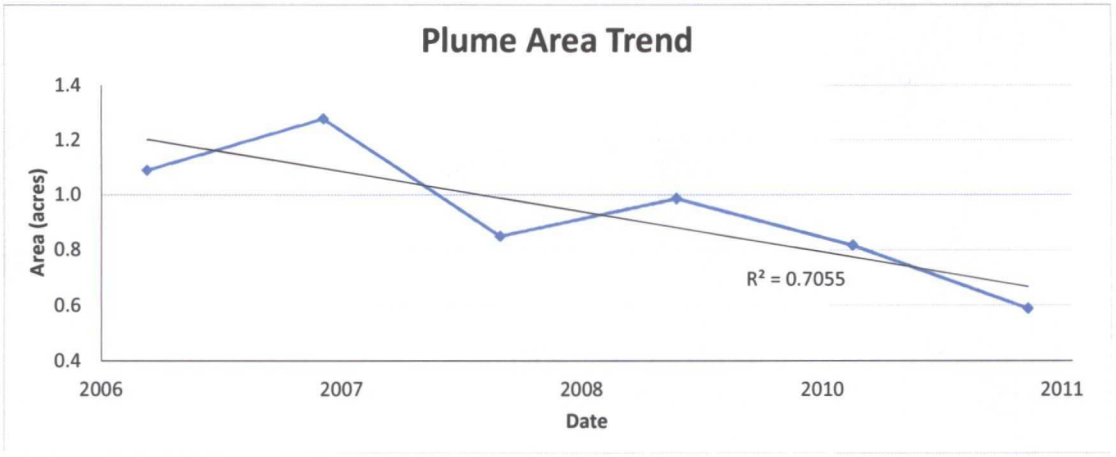
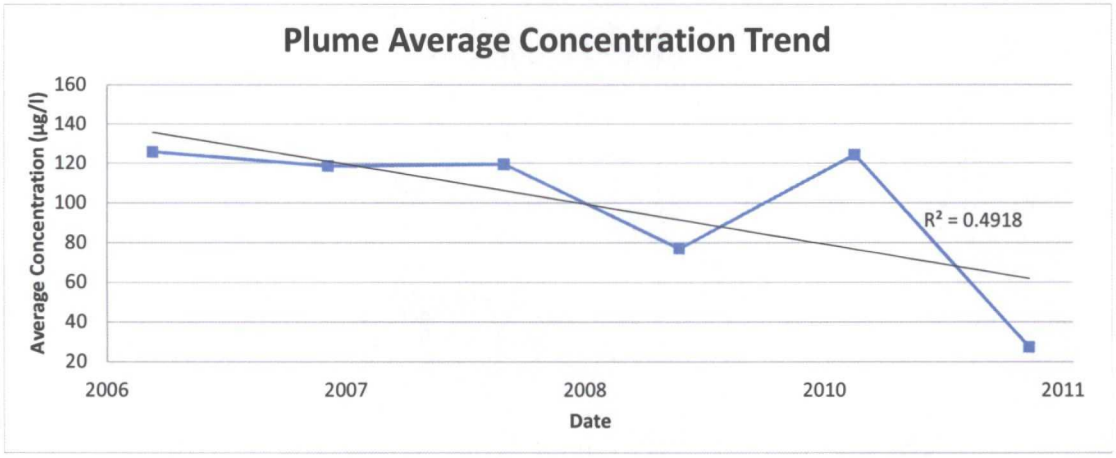
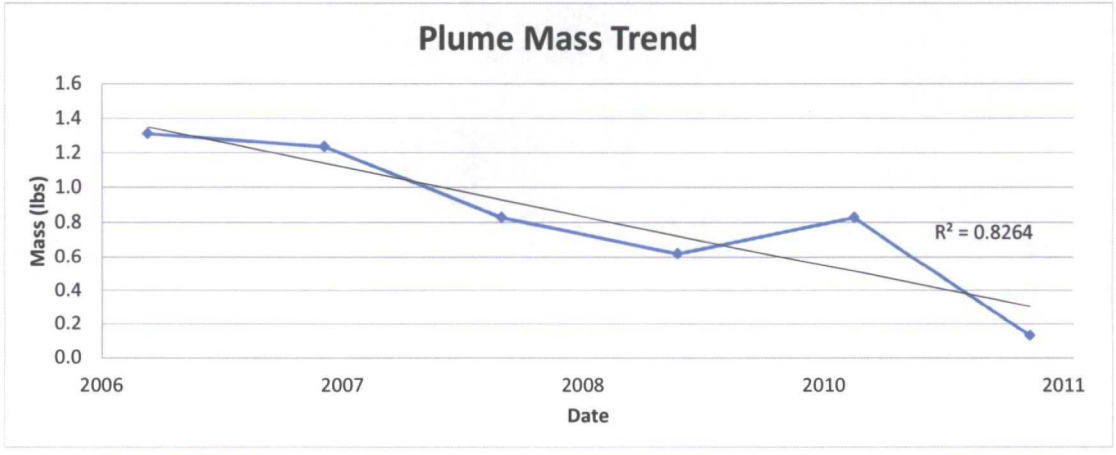
Environmental Challenges
BUSINESS SOLUTIONS

Figure 10
Benzene in Groundwater - 2011
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico

PROJ. NO: 205069.00	KMG	DATE: 01/12







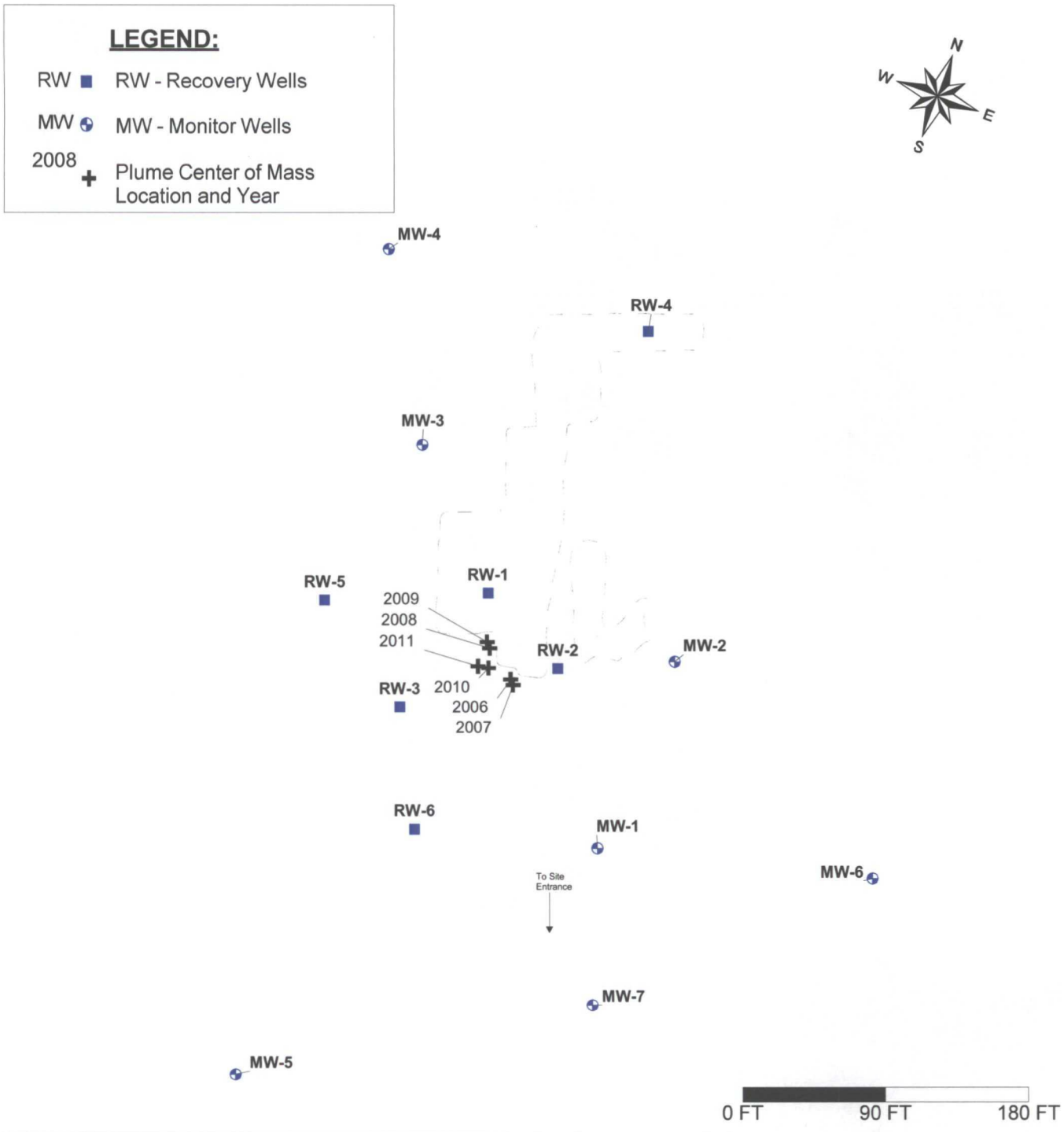
Summary of Plume Stability Characteristics

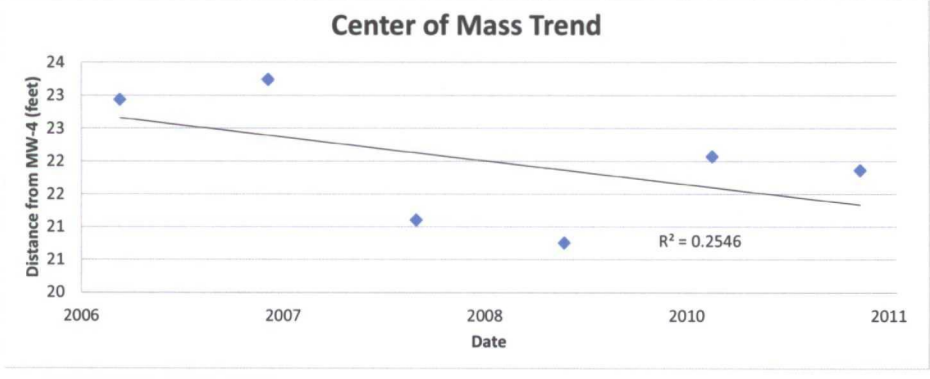
Date	Area (Acres)	Average Conc. (µg/l)	Mass (lbs)
2006	1.09	126	1.31
2007	1.28	119	1.23
2008	0.85	119	0.83
2009	0.99	77	0.62
2010	0.82	124	0.83
2011	0.59	27	0.13

EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS

Figure 11
Benzene Plume Stability Analysis
Summary 2006 - 2011
Plains Pipeline, L.P.
Vacuum to Jal #5
SRS. No.: 2003-00134
Lea County, New Mexico

PROJ. NO: 205069.00	KMG	DATE: 01/12





EARTHCON
Environmental Challenges
BUSINESS SOLUTIONS

Figure 12
Center of Mass Summary
2006-2011
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico

PROJ. NO: 205069.00	KMG	DATE: 01/12

TABLES

TABLE 1
2011 WELL SURVEY DATA AND GROUNDWATER ELEVATIONS
Plains Marketing, L.P.
SRS# 2003-00134
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico

Well Number	Date Measured	Top of Casing Elevation (ft)	Total Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	PSH Thickness (ft)	Recovery Method	Recovery		Corrected Groundwater Elevation (ft)
								PSH	H_2O	
MW-1	02/23/11	3363.04	64.14	ND	50.50	ND	NA	NA	NA	3312.54
MW-1	06/01/11	3363.04	64.14	ND	50.52	ND	NA	NA	NA	3312.52
MW-1	08/30/11	3363.04	64.14	ND	50.58	ND	NA	NA	NA	3312.46
MW-1	11/28/11	3363.04	64.14	ND	50.64	ND	NA	NA	NA	3312.40
MW-2	02/23/11	3362.11	64.05	ND	49.19	ND	NA	NA	NA	3312.92
MW-2	06/01/11	3362.11	64.05	ND	49.23	ND	NA	NA	NA	3312.88
MW-2	08/30/11	3362.11	64.05	ND	49.29	ND	NA	NA	NA	3312.82
MW-2	11/28/11	3362.11	64.05	ND	49.37	ND	NA	NA	NA	3312.74
MW-3	02/23/11	3362.13	64.68	ND	48.74	ND	NA	NA	NA	3313.39
MW-3	06/01/11	3362.13	64.68	ND	48.79	ND	NA	NA	NA	3313.34
MW-3	08/30/11	3362.13	64.68	ND	48.83	ND	NA	NA	NA	3313.30
MW-3	11/28/11	3362.13	64.68	ND	48.93	ND	NA	NA	NA	3313.20
MW-4	02/23/11	3362.49	63.40	ND	48.71	ND	NA	NA	NA	3313.78
MW-4	06/01/11	3362.49	63.40	ND	48.77	ND	NA	NA	NA	3313.72
MW-4	08/30/11	3362.49	63.40	ND	48.82	ND	NA	NA	NA	3313.67
MW-4	11/28/11	3362.49	63.40	ND	48.92	ND	NA	NA	NA	3313.57
MW-5	02/23/11	3363.67	63.71	ND	51.43	ND	NA	NA	NA	3312.24
MW-5	06/01/11	3363.67	63.71	ND	51.50	ND	NA	NA	NA	3312.17
MW-5	08/30/11	3363.67	63.71	ND	51.57	ND	NA	NA	NA	3312.10
MW-5	11/28/11	3363.67	63.71	ND	51.63	ND	NA	NA	NA	3312.04
MW-6	02/23/11	3362.6	63.41	ND	50.30	ND	NA	NA	NA	3312.30
MW-6	06/01/11	3362.6	63.41	ND	50.34	ND	NA	NA	NA	3312.26
MW-6	08/30/11	3362.6	63.41	ND	50.45	ND	NA	NA	NA	3312.15

TABLE 1
2011 WELL SURVEY DATA AND GROUNDWATER ELEVATIONS
Plains Marketing, L.P.
SRS# 2003-00134
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico

Well Number	Date Measured	Top of Casing Elevation (ft)	Total Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	PSH Thickness (ft)	Recovery Method	Recovery		Corrected Groundwater Elevation (ft)
MW-6	11/28/11	3362.6	63.41	ND	50.47	ND	NA	NA	NA	3312.13
MW-7	02/23/11	3362.75	63.59	ND	50.49	ND	NA	NA	NA	3312.26
MW-7	06/01/11	3362.75	63.59	ND	50.53	ND	NA	NA	NA	3312.22
MW-7	08/30/11	3362.75	63.59	ND	50.59	ND	NA	NA	NA	3312.16
MW-7	11/28/11	3362.75	63.59	ND	50.66	ND	NA	NA	NA	3312.09
RW-1	02/23/11	3348.04	61.65	50.41	50.42	0.01		0.10	9.90	3297.63
RW-1	02/23/11	3348.04	61.65	ND	52.51	ND	NA	NA	NA	3295.53
RW-1	06/01/11	3348.04	61.65	50.53	50.54	0.01	NA	NA	NA	3297.51
RW-1	08/30/11	3348.04	61.65	50.62	50.64	0.02		0.10	4.90	3297.42
RW-1	08/30/11	3348.04	61.65	ND	51.84	ND	NA	NA	NA	3296.20
RW-1	11/28/11	3348.04	61.65	50.63	50.69	0.06	NA	NA	NA	3297.40
RW-2	02/23/11	3362	61.10	49.34	49.40	0.06		0.10	9.90	3312.65
RW-2	02/23/11	3362	61.10	ND	50.78	ND	NA	NA	NA	3311.22
RW-2	06/01/11	3362	61.10	49.46	49.51	0.05	NA	NA	NA	3312.53
RW-2	08/30/11	3362	61.10	49.53	49.74	0.21		0.10	4.90	3312.44
RW-2	08/30/11	3362	61.10	ND	49.79	ND	NA	NA	NA	3312.21
RW-2	11/28/11	3362	61.10	49.56	49.69	0.13	NA	NA	NA	3312.42
RW-3	02/23/11	3361.93	63.66	49.85	49.89	0.04		0.10	9.90	3312.07
RW-3	02/23/11	3361.93	63.66	ND	51.54	ND	NA	NA	NA	3310.39
RW-3	06/01/11	3361.93	63.66	50.00	50.05	0.05	NA	NA	NA	3311.92
RW-3	08/30/11	3361.93	63.66	50.07	50.17	0.10		0.10	4.90	3311.85
RW-3	08/30/11	3361.93	63.66	ND	50.83	ND	NA	NA	NA	3311.10
RW-3	11/28/11	3361.93	63.66	50.06	50.30	0.24	NA	NA	NA	3311.83
RW-4	02/23/11	3363.22	63.51	ND	49.56	ND	NA	NA	NA	3313.66

TABLE 1
2011 WELL SURVEY DATA AND GROUNDWATER ELEVATIONS
Plains Marketing, L.P.
SRS# 2003-00134
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico

Well Number	Date Measured	Top of Casing Elevation (ft)	Total Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	PSH Thickness (ft)	Recovery Method	Recovery		Corrected Groundwater Elevation (ft)
RW-4	06/01/11	3363.22	63.51	ND	49.71	ND	NA	NA	NA	3313.51
RW-4	08/30/11	3363.22	63.51	ND	49.82	ND	NA	NA	NA	3313.40
RW-4	11/28/11	3363.22	63.51	ND	49.84	ND	NA	NA	NA	3313.38
RW-5	02/23/11	3362.38	64.00	ND	49.23	ND	NA	NA	NA	3313.15
RW-5	06/01/11	3362.38	64.00	ND	49.24	ND	NA	NA	NA	3313.14
RW-5	08/30/11	3362.38	64.00	ND	49.33	ND	NA	NA	NA	3313.05
RW-5	11/28/11	3362.38	64.00	ND	49.38	ND	NA	NA	NA	3313.00
RW-6	02/23/11	3363.11	64.12	ND	50.50	ND	NA	NA	NA	3312.61
RW-6	06/01/11	3363.11	64.12	ND	50.51	ND	NA	NA	NA	3312.60
RW-6	08/30/11	3363.11	64.12	ND	50.60	ND	NA	NA	NA	3312.51
RW-6	11/28/11	3363.11	64.12	ND	50.69	ND	NA	NA	NA	3312.42

NA: Not Applicable
ND: Not Detected

TABLE 2

Historical Monitor Well Survey Data and Groundwater Elevations

Available on CD attached to back cover

TABLE 3
2011 GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS#2003-00134
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-1	02/23/11	1102701-04	**0.025**	<0.0010	<0.0010	<0.0030
MW-1	06/01/11	1106050-01	0.0004 J	<0.0010	<0.0010	<0.0030
MW-1	08/30/11	11081008-01	<0.0010	<0.0010	<0.0010	<0.0030
MW-1	11/28/11	1111901-01	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	02/23/11	1102701-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	06/01/11	1106050-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	08/30/11	11081008-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	11/28/11	1111901-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	02/23/11	1102701-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	06/01/11	1106050-03	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	08/30/11	11081008-03	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	11/28/11	1111901-03	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	02/23/11	1102701-07	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	06/01/11	1106050-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	08/30/11	11081008-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	11/28/11	1111901-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	02/23/11	1102701-08	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	06/01/11	1106050-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	08/30/11	11081008-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	11/28/11	1111901-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	02/23/11	1102701-09	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	06/01/11	1106050-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	08/30/11	11081008-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	11/28/11	1111901-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	02/23/11	1102701-10	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	06/01/11	1106050-07	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	08/30/11	11081008-07	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	11/28/11	1111901-07	<0.0010	<0.0010	<0.0010	<0.0030
RW-1	06/01/11	1106050-08	**0.066**	0.016	0.057	0.18
RW-2	06/01/11	1106050-09	**0.034**	0.038	0.051	0.14
RW-3	06/01/11	110650-10	**0.21**	0.2	0.18	0.39
RW-4	02/23/11	1102701-01	<0.0010	<0.0010	<0.0010	<0.0030

TABLE 3
2011 GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS#2003-00134
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
RW-4	06/01/11	1106050-11	<0.0010	<0.0010	<0.0010	<0.0030
RW-4	08/30/11	11081008-08	<0.0010	<0.0010	<0.0010	<0.0030
RW-4	11/28/11	1111901-08	<0.0010	<0.0010	<0.0010	<0.0030
RW-5	02/23/11	1102701-02	<0.0010	<0.0010	<0.0010	<0.0030
RW-5	06/01/11	1106050-12	<0.0010	<0.0010	<0.0010	<0.0030
RW-5	08/30/11	11081008-09	<0.0010	<0.0010	<0.0010	<0.0030
RW-5	11/28/11	1111901-09	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	02/23/11	1102701-03	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	06/01/11	1106050-13	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	08/30/11	11081008-10	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	11/28/11	1111901-10	<0.0010	<0.0010	<0.0010	<0.0030

J = Analyte detected below quantitation limit (Detected below MDL but above SDL.)
MDL = Method detection limit
SDL = Sample detection limit
Concentration in **Bold** = above NMOCD Criteria

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2003-00134
Vacuum to Jal Mainline #5
Lea County, New Mexico

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-1	03/29/06	T13036-1	**0.557**	0.0032	0.0133	0.0092
MW-1	06/10/06	T13862-1	**0.639** [a]	<0.00036	0.0033	0.0015 J
MW-1	09/12/06	T14676-1	**0.512** [a]	<0.00020	<0.00033	<0.00036
MW-1	12/06/06	T15618-1	**0.452** [a]	<0.00020	0.0049	<0.00036
MW-1	02/28/07	T16494-1	**0.481** [a]	<0.00020	0.0191	<0.00036
MW-1	05/30/07	T17645-1	**0.213** [a]	<0.00023	0.0043	<0.00055
MW-1	09/06/07	T18811-1	**0.066**	<0.00023	0.006	<0.00055
MW-1	11/13/07	T19737-1	**0.0955** [c]	<0.001	0.0091	<0.003
MW-1	02/26/08	T21028-1	**0.0156**	<0.00023	0.00069 J	<0.00055
MW-1	05/28/08	T22367-1	**0.031**	<0.00023	0.0022	<0.00055
MW-1	08/18/08	T23538-1	0.001	<0.0005	<0.0005	<0.001
MW-1	11/19/08	8112008	**0.0209**	0.00120	0.00330	<0.00100
MW-1	02/17/09	187728	0.0027	<0.001	<0.001	<0.001
MW-1	05/19/09	196550	0.0004 J	<0.000281	<0.000535	<0.000960
MW-1	08/26/09	208325	<0.000133	<0.000281	<0.000535	<0.000960
MW-1	11/18/09	215413	**0.223**	<0.00332	0.0617	<0.00143
MW-1	02/11/10	222481	**0.0769**	<0.0004	0.0042	<0.000379
MW-1	05/12/10	1005475-01	<0.0010	<0.0010	<0.0010	<0.0030
MW-1	08/26/10	1008909-01	**0.017**	<0.0010	<0.0010	<0.0030
MW-1	11/18/10	1011749-01	0.0077	<0.0010	<0.0010	<0.0030
MW-1	02/23/11	1102701-04	**0.025**	<0.0010	<0.0010	<0.0030
MW-1	06/01/11	1106050-01	0.0004 J	<0.0010	<0.0010	<0.0030
MW-1	08/30/11	11081008-01	<0.0010	<0.0010	<0.0010	<0.0030
MW-1	11/28/11	1111901-01	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	03/29/06	T 13036-2	0.0012	0.0011	0.00042	<0.00072
MW-2	06/10/06	T13862-2	0.00038 J	<0.00036	<0.00035	<0.00072
MW-2	09/12/06	T14676-2	<0.00035	<0.00020	<0.00033	<0.00036
MW-2	12/06/06	T15618-2	0.0012	0.00087 J	<0.00033	<0.00036
MW-2	02/28/07	T16494-2	0.0044	0.0017	<0.00033	<0.00036
MW-2	05/30/07	T17645-2	0.00065 J	<0.00023	<0.00035	<0.00055
MW-2	09/06/07	T18811-2	<0.00021	<0.00023	<0.00035	<0.00055
MW-2	11/13/07	T19737-2	<0.001	<0.001	<0.001	<0.003
MW-2	02/26/08	T21028-2	<0.00021	<0.00023	<0.00035	<0.00055
MW-2	05/28/08	T22367-2	<0.00021	<0.00023	<0.00035	<0.00055
MW-2	08/18/08	T23538-2	0.00065 J	<0.0005	<0.0005	<0.001
MW-2	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100
MW-2	02/17/09	187729	<0.00100	<0.00100	<0.00100	<0.00100
MW-2	05/19/09	196551	<0.000133	<0.000281	<0.000535	0.0018
MW-2	08/26/09	208326	<0.000149	<0.000188	<0.000178	<0.000163
MW-2	11/18/09	215414	<0.000160	<0.000332	<0.000230	<0.000143
MW-2	02/11/10	222482	<0.000371	<0.0004	<0.00043	<0.000379

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2003-00134
Vacuum to Jal Mainline #5
Lea County, New Mexico

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-2	05/12/10	1005475-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	08/26/10	1008909-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	11/18/10	1011749-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	02/23/11	1102701-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	06/01/11	1106050-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	08/30/11	11081008-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-2	11/28/11	1111901-02	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	03/29/06	T 13036-3	**0.0129**	0.0089	0.0021	0.0038
MW-3	06/10/06	T13862-3	0.0075	0.0043	0.00071 J	0.002
MW-3	09/12/06	T14676-3	0.0023	<0.00020	<0.00033	<0.00036
MW-3	12/06/06	T15618-3	0.0021	0.00077 J	<0.00033	<0.00036
MW-3	02/28/07	T16494-3	0.0078	0.0026	0.00061	0.0024 J
MW-3	05/30/07	T17645-3	<0.00021	<0.00023	<0.00035	<0.00055
MW-3	09/06/07	T18811-3	<0.00021	<0.00023	<0.00035	<0.00055
MW-3	11/13/07	T19737-3	<0.001	<0.001	<0.001	<0.003
MW-3	02/26/08	T21028-3	<0.00021	<0.00023	<0.00035	<0.00055
MW-3	05/28/08	T22367-3	<0.00021	<0.00023	<0.00035	<0.00055
MW-3	08/18/08	T23538-3	0.0019	<0.0005	<0.0005	<0.0005
MW-3	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100
MW-3	02/17/09	187730	<0.00100	<0.00100	<0.00100	<0.00100
MW-3	05/19/09	196552	0.0011	<0.000281	<0.000535	<0.000960
MW-3	08/26/09	208327	<0.000149	<0.000188	<0.000178	<0.000163
MW-3	11/18/09	215415	<0.000160	<0.000332	<0.000230	<0.000143
MW-3	02/11/10	222483	<0.000371	<0.0004	<0.00043	<0.000379
MW-3	08/26/10	1008909-03	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	11/18/10	1011749-03	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	02/23/11	1102701-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	06/01/11	1106050-03	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	08/30/11	11081008-03	<0.0010	<0.0010	<0.0010	<0.0030
MW-3	11/28/11	1111901-03	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	12/06/06	T15618-4	<0.00035	<0.00020	<0.00033	<0.00036
MW-4	02/28/07	T16494-4	<0.00035	<0.00020	<0.00033	<0.00036
MW-4	05/30/07	T17645-4	<0.00021	<0.00023	<0.00035	<0.00055
MW-4	09/06/07	T18811-4	<0.00021	<0.00023	<0.00035	<0.00055
MW-4	11/13/07	T19737-4	<0.001	<0.001	<0.001	<0.003
MW-4	02/26/08	T21028-4	0.00086 J	<0.00023	<0.00035	<0.00055
MW-4	05/28/08	T22367-4	<0.00021	<0.00023	<0.00035	<0.00055
MW-4	08/18/08	T23538-4	<0.0005	<0.0005	<0.0005	<0.001
MW-4	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100
MW-4	02/17/09	187731	<0.00100	<0.00100	<0.00100	<0.00100

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2003-00134
Vacuum to Jal Mainline #5
Lea County, New Mexico

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-4	05/19/09	196553	<0.000133	<0.000281	<0.000535	<0.000960
MW-4	08/26/09	208328	<0.000149	<0.000188	<0.000178	<0.000163
MW-4	11/18/09	215416	<0.000160	<0.000332	<0.000230	<0.000143
MW-4	02/11/10	222484	<0.000371	<0.0004	<0.00043	<0.000379
MW-4	05/12/10	1005475-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	08/26/10	1008909-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	11/18/10	1011749-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	02/23/11	1102701-07	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	06/01/11	1106050-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	08/30/11	11081008-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-4	11/28/11	1111901-04	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	12/06/06	T15618-5	0.00055 J	<0.00020	<0.00033	<0.00036
MW-5	02/28/07	T16494-5	<0.00035	<0.00020	<0.00033	<0.00036
MW-5	05/30/07	T17645-5	<0.00021	<0.00023	<0.00035	<0.00055
MW-5	09/06/07	T18811-5	<0.00021	<0.00023	<0.00035	<0.00055
MW-5	11/13/07	T19737-5	<0.001	<0.001	<0.001	<0.003
MW-5	02/26/08	T21028-5	<0.00021	<0.00023	<0.00035	<0.00055
MW-5	05/28/08	T22367-5	<0.00021	<0.00023	<0.00035	<0.00055
MW-5	08/18/08	T23538-5	<0.0005	<0.0005	<0.0005	<0.001
MW-5	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100
MW-5	02/17/09	187732	<0.00100	<0.00100	<0.00100	<0.00100
MW-5	05/19/09	196554	<0.000133	<0.000281	<0.000535	<0.000960
MW-5	08/26/09	208329	<0.000149	<0.000188	<0.000178	<0.000163
MW-5	11/18/09	215417	<0.000160	<0.000332	<0.000230	<0.000143
MW-5	02/11/10	222485	<0.000371	<0.0004	<0.00043	<0.000379
MW-5	05/12/10	1005475-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	08/26/10	1008909-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	11/18/10	1011749-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	02/23/11	1102701-08	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	06/01/11	1106050-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	08/30/11	11081008-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-5	11/28/11	1111901-05	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	12/06/06	T15618-6	<0.00035	<0.00020	<0.00033	<0.00036
MW-6	02/28/07	T16494-6	<0.00035	<0.00020	<0.00033	<0.00036
MW-6	05/30/07	T17645-6	<0.00021	<0.00023	<0.00035	<0.00055
MW-6	09/06/07	T18811-6	<0.00021	<0.00023	<0.00035	<0.00055
MW-6	11/13/07	T19737-6	<0.001	<0.001	<0.001	<0.003
MW-6	02/26/08	T21028-6	<0.00021	<0.00023	<0.00035	<0.00055
MW-6	05/28/08	T22367-6	<0.00021	<0.00023	<0.00035	<0.00055
MW-6	08/18/08	T23538-6	<0.0005	<0.0005	<0.0005	<0.001

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2003-00134
Vacuum to Jal Mainline #5
Lea County, New Mexico

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-6	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100
MW-6	02/17/09	187733	<0.00100	<0.00100	<0.00100	<0.00100
MW-6	05/19/09	196555	<0.000133	<0.000281	<0.000535	<0.000960
MW-6	08/26/09	208330	<0.000149	<0.000188	<0.000178	<0.000163
MW-6	11/18/09	215418	<0.000160	<0.000332	<0.000230	<0.000143
MW-6	02/11/10	222486	<0.000371	<0.0004	<0.00043	<0.000379
MW-6	05/12/10	1005475-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	08/26/10	1008909-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	11/18/10	1011749-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	02/23/11	1102701-09	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	06/01/11	1106050-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	08/30/11	11081008-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-6	11/28/11	1111901-06	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	12/06/06	T15618-7	<0.00035	<0.00020	<0.00033	<0.00036
MW-7	02/28/07	T16494-7	**0.0114**	<0.00020	<0.00033	<0.00036
MW-7	05/30/07	T17645-7	0.0049	<0.00023	<0.00035	<0.00055
MW-7	09/06/07	T18811-7	0.00073 J	<0.00023	<0.00035	<0.00055
MW-7	11/13/07	T19737-7	<0.001	<0.001	<0.001	<0.003
MW-7	02/26/08	T21028-7	<0.00021	<0.00023	<0.00035	<0.00055
MW-7	05/28/08	T22367-7	0.00053 J	<0.00023	<0.00035	<0.00055
MW-7	08/18/08	T23538-7	<0.0005	<0.0005	<0.0005	<0.001
MW-7	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100
MW-7	02/17/09	187734	<0.00100	<0.00100	<0.00100	<0.00100
MW-7	05/19/09	196556	<0.000133	<0.000281	<0.000535	<0.000960
MW-7	08/26/09	208331	<0.000149	<0.000188	<0.000178	<0.000163
MW-7	11/18/09	215419	<0.000160	<0.000332	<0.000230	<0.000143
MW-7	02/11/10	222487	<0.000371	<0.0004	<0.00043	<0.000379
MW-7	05/12/10	1005475-07	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	08/26/10	1008909-07	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	11/18/10	1011749-07	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	02/23/11	1102701-10	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	06/01/11	1106050-07	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	08/30/11	11081008-07	<0.0010	<0.0010	<0.0010	<0.0030
MW-7	11/28/11	1111901-07	<0.0010	<0.0010	<0.0010	<0.0030
RW-1	06/01/11	1106050-08	**0.066**	0.016	0.057	0.18
RW-2	06/01/11	1106050-09	**0.034**	0.038	0.051	0.14
RW-3	06/01/11	110650-10	**0.21**	0.2	0.18	0.39

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2003-00134
Vacuum to Jal Mainline #5
Lea County, New Mexico

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
RW-4	12/06/06	T15618-8	0.00099 J	0.00035 J	<0.00033	<0.00036
RW-4	02/28/07	T16494-8	<0.00035	<0.00020	<0.00033	<0.00036
RW-4	05/30/07	T17645-8	<0.00021	<0.00023	<0.00035	<0.00055
RW-4	09/06/07	T18811-8	<0.00021	<0.00023	<0.00035	<0.00055
RW-4	11/13/07	T19737-8	<0.001	<0.001	<0.001	<0.003
RW-4	02/26/08	T21028-8	<0.00021	<0.00023	<0.00035	<0.00055
RW-4	05/28/08	T22367-11	<0.00021	<0.00023	<0.00035	<0.00055
RW-4	08/18/08	T23538-8	<0.0005	<0.0005	<0.0005	<0.001
RW-4	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100
RW-4	02/17/09	187735	<0.00100	<0.00100	<0.00100	<0.00100
RW-4	05/19/09	196560	<0.000133	<0.000281	<0.000535	<0.000960
RW-4	08/26/09	208332	<0.000149	<0.000188	<0.000178	<0.000163
RW-4	11/18/09	215420	<0.000160	<0.000332	<0.000230	<0.000143
RW-4	02/11/10	222488	<0.000371	<0.0004	<0.00043	<0.000379
RW-4	05/12/10	1005475-11	<0.0010	<0.0010	<0.0010	<0.0030
RW-4	08/26/10	1008909-08	<0.0010	<0.0010	<0.0010	<0.0030
RW-4	11/18/10	1011749-08	<0.0010	<0.0010	<0.0010	<0.0030
RW-4	02/23/11	1102701-01	<0.0010	<0.0010	<0.0010	<0.0030
RW-4	06/01/11	1106050-11	<0.0010	<0.0010	<0.0010	<0.0030
RW-4	08/30/11	11081008-08	<0.0010	<0.0010	<0.0010	<0.0030
RW-4	11/28/11	1111901-08	<0.0010	<0.0010	<0.0010	<0.0030
RW-5	12/06/06	T15618-9	0.0035	0.00095 J	0.00043 J	<0.00036
RW-5	02/28/07	T16494-9	**0.0193**	0.0038	0.0015	0.0014 J
RW-5	05/30/07	T17645-9	0.0045	0.0011	0.00066 J	0.00056 J
RW-5	09/06/07	T18811-9	0.0012	<0.00023	<0.00035	<0.00055
RW-5	11/13/07	T19737-9	0.0024	<0.001	<0.001	<0.003
RW-5	02/26/08	T21028-9	<0.00021	<0.00023	<0.00035	<0.00055
RW-5	05/28/08	T22367-12	0.00045 J	<0.00023	<0.00035	<0.00055
RW-5	08/18/08	T23538-9	<0.0005	<0.0005	<0.0005	<0.001
RW-5	11/19/08	8112008	0.00260	<0.00100	<0.00100	<0.00100
RW-5	02/17/09	187736	0.0048	<0.00100	<0.00100	<0.00100
RW-5	05/19/09	196561	0.0003 J	<0.000281	<0.000535	0.0016
RW-5	08/26/09	208333	0.0024	<0.000281	<0.000535	<0.000960
RW-5	11/18/09	215421	0.0008 J	<0.000332	<0.000230	<0.000143
RW-5	02/11/10	222489	<0.000371	<0.0004	<0.00043	<0.000379
RW-5	05/12/10	1005475-12	<0.0010	<0.0010	<0.0010	<0.0030
RW-5	08/26/10	1008909-09	<0.0010	<0.0010	<0.0010	<0.0030
RW-5	11/18/10	1011749-09	<0.0010	<0.0010	<0.0010	<0.0030
RW-5	02/23/11	1102701-02	<0.0010	<0.0010	<0.0010	<0.0030
RW-5	06/01/11	1106050-12	<0.0010	<0.0010	<0.0010	<0.0030
RW-5	08/30/11	11081008-09	<0.0010	<0.0010	<0.0010	<0.0030

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
Plains Marketing, L.P.
SRS #2003-00134
Vacuum to Jal Mainline #5
Lea County, New Mexico

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
RW-5	11/28/11	1111901-09	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	12/06/06	T15618-10	<0.00035	<0.00020	<0.00033	<0.00036
RW-6	02/28/07	T16494-10	<0.00035	<0.00020	<0.00033	<0.00036
RW-6	05/30/07	T17645-10	<0.00021	<0.00023	<0.00035	<0.00055
RW-6	09/06/07	T18811-10	<0.00021	<0.00023	<0.00035	<0.00055
RW-6	11/13/07	T19737-10	<0.001	<0.001	<0.001	<0.003
RW-6	02/26/08	T21028-10	<0.00021	<0.00023	<0.00035	<0.00055
RW-6	05/28/08	T22367-13	<0.00021	<0.00023	<0.00035	<0.00055
RW-6	08/18/08	T23538-10	<0.0005	<0.0005	<0.0005	<0.001
RW-6	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100
RW-6	02/17/09	187737	<0.00100	<0.00100	<0.00100	<0.00100
RW-6	05/19/09	196562	0.0008 J	<0.000281	<0.000535	<0.000960
RW-6	08/26/09	208334	0.0002 J	<0.000281	<0.000535	<0.000960
RW-6	11/18/09	215422	<0.000160	<0.000332	<0.000230	<0.000143
RW-6	02/11/10	222490	<0.000371	<0.0004	<0.00043	<0.000379
RW-6	05/12/10	1005475-13	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	08/26/10	1008909-10	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	11/18/10	1011749-10	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	02/23/11	1102701-03	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	06/01/11	1106050-13	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	08/30/11	11081008-10	<0.0010	<0.0010	<0.0010	<0.0030
RW-6	11/28/11	1111901-10	<0.0010	<0.0010	<0.0010	<0.0030

RW-1, RW-2 and RW-3 not sampled due to presence of Phase Separated Hydrocarbons
[a] Result is from Run #2.
J = Analyte detected below quantitation limit (Detected below MDL but above SDL.)
MDL = Method detection limit
SDL = Sample detection limit
Concentration in **Bold** = above NMOCD Criteria

TABLE 5
GROUNDWATER ANALYTICAL RESULTS FOR
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs) FROM WELLS WITH PSH/SHEEN
Plains Marketing, L.P.
SRS#2003-00134
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico

Monitoring Well	Sample Date	Lab Report #	Napthalene	Acenapthylene	Acenapthene	Flourene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]-anthracene	Chrysene	Benzo[b]-fluoranthene	Benzo[a]-pyrene	Dibenz[a,h]-anthracene	Dibenzofuran	Benzo[g,h,i]-perylene	Benzo(k)fluoranthene	1- Methylnaphthalene	2-Methylnaphthalene	Total Methylnaphthalene	TPH-GRO (C6-C10)	TPH (C10-C28)	TPH (C28-C35)
Units			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Other regulatory limits (Tap Water)*			***		365	243	0.91	1100	1830	1460	183	0.91	29.1	0.91	0.7**	0.091			9.1			***			
MW-1	12/7/2011	1112252-01	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	<0.20	<0.20	NA	NA	NA	NA	NA	NA
RW-1	5/28/2008	T22367-8	14.1	<1.6	<1.5	<2.1	<2.4	<1.6	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.3		<2.5	<1.6		13		9.01	3.28	
RW-1	5/19/2009	196557	17.6	<0.0707	<0.131	1.98	<0.0801	2.76	<0.0808	<0.0880	<0.0458	<0.0302	<0.0913	<0.0631	<0.0506	<0.0558	2.34	<0.0628	<0.0765	19.9	17.2	**37.1**	3.73	<0.876	
RW-1	5/12/2010	1005475-08	2	<0.20	<0.20	0.31	<0.20	0.39	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.39	<0.20	<0.20	2.8	2.3	5.1	6.5	4.6	<0.47
RW-2	5/28/2008	T22367-9	10	<1.6	<1.5	<2.1	<2.4	<1.6	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.3		<2.5	<1.6		7.4		3.61	1.53	
RW-2	5/19/2009	196558	2.66	<0.0707	<0.131	1.17	<0.0801	1.49	<0.0808	<0.0880	<0.0458	<0.0302	<0.0913	<0.0631	<0.0506	<0.0558	1.05	<0.0628	<0.0765	5.64	4.16	9.8	1.77	<0.876	
RW-2	5/12/2010	1005475-09	**30**	<0.20	0.26	2.5	<0.20	4.4	<0.20	<0.20	0.24	<0.20	0.68	<0.20	<0.20	<0.20	4.2	<0.20	<0.20	43	44	**87**	110	170	20
RW-3	5/28/2008	T22367-10	13.5	<1.6	<1.5	<2.1	<2.4	<1.6	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.3		<2.5	<1.6		7.8		3.81	0.292	
RW-3	5/19/2009	196559	25	<0.0710	<0.131	2.29	<0.0805	3.26	<0.0811	<0.0883	<0.0460	<0.0304	<0.0917	<0.0633	<0.0508	<0.0560	3.24	<0.0631	<0.0768	27.2	22.6	**49.8**	3.1 J	1.18 J	
RW-3	5/12/2010	1005475-10	**33**	<0.20	0.47	3.7	<0.20	6.3	0.54	<0.20	<0.20	<0.20	1	<0.20	<0.20	<0.20	4.6	<0.20	<0.20	53	53	**106**	120	170	26

< = Not Detected
Tap Water* = NMED Tap Water Soil screening levels for residential scenarios.
*** = NM Water Quality Standard for PAHs is 30µg/L for total naphthalenes plus monomethylnaphthalenes (total methylnaphthalenes)
** = NM Water Quality Standard
J = Analyte detected below quantitation limit (Detected below MDL but above SDL.)
MDL = Method detection limit
SDL = Sample detection limit
NA = Not requested for analysis
Concentrations in **Bold** exceed applicable New Mexico regulatory standards

TABLE 6
2011 MONTHLY DISSOLVED PHASE GROUNDWATER AND PSH RECOVERY DATA
Plains Marketing, L.P.
SRS#2003-00134
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico

Month	Volume of PSH recovered in gallons	Volume of dissolved phase groundwater recovered in gallons
January	1.10	78.90
February	1.00	89.00
March	1.50	108.50
April	1.10	88.90
May	1.20	124.00
June	0.80	114.20
July	1.20	83.80
August	1.60	98.40
September	1.10	53.90
October	1.15	113.95
November	0.80	74.20
December	0.90	49.05
Total	**13.45**	**1076.80**

Appendix A

2011 Laboratory Analytical Reports

1st Quarter – Laboratory ID# 1102701

2nd Quarter – Laboratory ID# 1106050

3rd Quarter – Laboratory ID# 110810008

4th Quarter – Laboratory ID# 1111901

Chain of Custody Documentation

ALS Environmental

03-Mar-2011

Chan Patel
Premier Environmental Services
4800 Sugar Grove Blvd.
Suite 390
Houston, TX 77477

Tel: (281) 240-5200
Fax: (770) 973-7395

Re: Vacuum to Jal #5 Work Order: **1102701**

Dear Chan,

ALS Environmental received 11 samples on 24-Feb-2011 08:50 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

JayLynn F Thibault

Electronically approved by: Glenda H. Ramos

JayLynn F Thibault
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: TX: T104704231-10-3

ALS Environmental

Date: 03-Mar-11

Client: Premier Environmental Services
Project: Vacuum to Jal #5
Work Order: **1102701**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1102701-01	RW4	Groundwater		2/23/2011 11:50	2/24/2011 08:50	☐
1102701-02	RW5	Groundwater		2/23/2011 11:35	2/24/2011 08:50	☐
1102701-03	RW6	Groundwater		2/23/2011 11:30	2/24/2011 08:50	☐
1102701-04	MW1	Groundwater		2/23/2011 12:00	2/24/2011 08:50	☐
1102701-05	MW2	Groundwater		2/23/2011 11:55	2/24/2011 08:50	☐
1102701-06	MW3	Groundwater		2/23/2011 11:40	2/24/2011 08:50	☐
1102701-07	MW4	Groundwater		2/23/2011 11:45	2/24/2011 08:50	☐
1102701-08	MW5	Groundwater		2/23/2011 11:25	2/24/2011 08:50	☐
1102701-09	MW6	Groundwater		2/23/2011 12:10	2/24/2011 08:50	☐
1102701-10	MW7	Groundwater		2/23/2011 12:05	2/24/2011 08:50	☐
1102701-11	Trip Blank	Water		2/23/2011	2/24/2011 08:50	☑

Client:	Premier Environmental Services
Project:	Vacuum to Jal #5
Work Order:	1102701

Case Narrative

Batch R106038 BTEX (Sample 1102702-04)MS/MSD unrelated sample.

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Vacuum to Jal #5
Work Order: 1102701
Sample ID: RW4
Lab ID: 1102701-01
Collection Date: 2/23/2011 11:50 AM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/1/2011 06:47 AM
Toluene	ND		0.0010	mg/L	1	3/1/2011 06:47 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 06:47 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2011 06:47 AM
Surr: 4-Bromofluorobenzene	*101*		*77-129*	*%REC*	1	3/1/2011 06:47 AM
Surr: Trifluorotoluene	*100*		*75-130*	*%REC*	1	3/1/2011 06:47 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Vacuum to Jal #5
Work Order: 1102701
Sample ID: RW5
Lab ID: 1102701-02
Collection Date: 2/23/2011 11:35 AM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/1/2011 07:05 AM
Toluene	ND		0.0010	mg/L	1	3/1/2011 07:05 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 07:05 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2011 07:05 AM
Surr: 4-Bromofluorobenzene	*101*		*77-129*	*%REC*	1	3/1/2011 07:05 AM
Surr: Trifluorotoluene	*99.5*		*75-130*	*%REC*	1	3/1/2011 07:05 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Vacuum to Jal #5 **Work Order:** 1102701
Sample ID: RW6 **Lab ID:** 1102701-03
Collection Date: 2/23/2011 11:30 AM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/1/2011 07:22 AM
Toluene	ND		0.0010	mg/L	1	3/1/2011 07:22 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 07:22 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2011 07:22 AM
Surr: 4-Bromofluorobenzene	*101*		*77-129*	*%REC*	1	3/1/2011 07:22 AM
Surr: Trifluorotoluene	*99.3*		*75-130*	*%REC*	1	3/1/2011 07:22 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Vacuum to Jal #5 **Work Order:** 1102701
Sample ID: MW1 **Lab ID:** 1102701-04
Collection Date: 2/23/2011 12:00 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.025**		**0.0010**	**mg/L**	1	3/1/2011 07:39 AM
Toluene	ND		0.0010	mg/L	1	3/1/2011 07:39 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 07:39 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2011 07:39 AM
Surr: 4-Bromofluorobenzene	*111*		*77-129*	*%REC*	1	3/1/2011 07:39 AM
Surr: Trifluorotoluene	*102*		*75-130*	*%REC*	1	3/1/2011 07:39 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Vacuum to Jal #5 **Work Order:** 1102701
Sample ID: MW2 **Lab ID:** 1102701-05
Collection Date: 2/23/2011 11:55 AM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/1/2011 07:56 AM
Toluene	ND		0.0010	mg/L	1	3/1/2011 07:56 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 07:56 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2011 07:56 AM
Surr: 4-Bromofluorobenzene	*102*		*77-129*	*%REC*	1	3/1/2011 07:56 AM
Surr: Trifluorotoluene	*100*		*75-130*	*%REC*	1	3/1/2011 07:56 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Vacuum to Jal #5 **Work Order:** 1102701
Sample ID: MW3 **Lab ID:** 1102701-06
Collection Date: 2/23/2011 11:40 AM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/1/2011 08:14 AM
Toluene	ND		0.0010	mg/L	1	3/1/2011 08:14 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 08:14 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2011 08:14 AM
Surr: 4-Bromofluorobenzene	*102*		*77-129*	*%REC*	1	3/1/2011 08:14 AM
Surr: Trifluorotoluene	*101*		*75-130*	*%REC*	1	3/1/2011 08:14 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Vacuum to Jal #5 **Work Order:** 1102701
Sample ID: MW4 **Lab ID:** 1102701-07
Collection Date: 2/23/2011 11:45 AM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/1/2011 08:31 AM
Toluene	ND		0.0010	mg/L	1	3/1/2011 08:31 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 08:31 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2011 08:31 AM
Surr: 4-Bromofluorobenzene	*102*		*77-129*	*%REC*	1	3/1/2011 08:31 AM
Surr: Trifluorotoluene	*101*		*75-130*	*%REC*	1	3/1/2011 08:31 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Vacuum to Jal #5
Work Order: 1102701
Sample ID: MW5
Lab ID: 1102701-08
Collection Date: 2/23/2011 11:25 AM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/1/2011 09:05 AM
Toluene	ND		0.0010	mg/L	1	3/1/2011 09:05 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 09:05 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2011 09:05 AM
Surr: 4-Bromofluorobenzene	*100*		*77-129*	*%REC*	1	3/1/2011 09:05 AM
Surr: Trifluorotoluene	*99.6*		*75-130*	*%REC*	1	3/1/2011 09:05 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Vacuum to Jal #5 **Work Order:** 1102701
Sample ID: MW6 **Lab ID:** 1102701-09
Collection Date: 2/23/2011 12:10 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/1/2011 09:23 AM
Toluene	ND		0.0010	mg/L	1	3/1/2011 09:23 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 09:23 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2011 09:23 AM
Surr: 4-Bromofluorobenzene	*101*		*77-129*	*%REC*	1	3/1/2011 09:23 AM
Surr: Trifluorotoluene	*99.4*		*75-130*	*%REC*	1	3/1/2011 09:23 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *03-Mar-11*

Client: Premier Environmental Services
Project: Vacuum to Jal #5 **Work Order:** 1102701
Sample ID: MW7 **Lab ID:** 1102701-10
Collection Date: 2/23/2011 12:05 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	ND		0.0010	mg/L	1	3/1/2011 09:40 AM
Toluene	ND		0.0010	mg/L	1	3/1/2011 09:40 AM
Ethylbenzene	ND		0.0010	mg/L	1	3/1/2011 09:40 AM
Xylenes, Total	ND		0.0030	mg/L	1	3/1/2011 09:40 AM
Surr: 4-Bromofluorobenzene	*103*		*77-129*	*%REC*	1	3/1/2011 09:40 AM
Surr: Trifluorotoluene	*99.8*		*75-130*	*%REC*	1	3/1/2011 09:40 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 03-Mar-11

Client: Premier Environmental Services

Work Order: 1102701

Project: Vacuum to Jal #5

QC BATCH REPORT

Batch ID: **R106038** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW3-022811-R106038** Units: **µg/L** Analysis Date: **3/1/2011 06:30 AM**

Client ID: Run ID: **BTEX1_110228D** SeqNo: **2294082** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	*30.79*	1.0	*30*	0	*103*	*77-129*	0			
Surr: Trifluorotoluene	*30.23*	1.0	*30*	0	*101*	*75-130*	0			

LCS Sample ID: **BLCSW3-022811-R106038** Units: **µg/L** Analysis Date: **3/1/2011 05:55 AM**

Client ID: Run ID: **BTEX1_110228D** SeqNo: **2294081** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.2	1.0	20	0	101	77-126	0			
Toluene	20.6	1.0	20	0	103	80-124	0			
Ethylbenzene	20.96	1.0	20	0	105	76-125	0			
Xylenes, Total	61.48	3.0	60	0	102	79-124	0			
Surr: 4-Bromofluorobenzene	*32.13*	1.0	*30*	0	*107*	*77-129*	0			
Surr: Trifluorotoluene	*30.68*	1.0	*30*	0	*102*	*75-130*	0			

MS Sample ID: **1102702-04AMS** Units: **µg/L** Analysis Date: **3/1/2011 11:27 AM**

Client ID: Run ID: **BTEX1_110228D** SeqNo: **2294099** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	24.23	1.0	20	0	121	77-126	0			
Toluene	24.77	1.0	20	0	124	80-124	0			
Ethylbenzene	25.14	1.0	20	0	126	76-125	0			S
Xylenes, Total	72.97	3.0	60	0	122	79-124	0			
Surr: 4-Bromofluorobenzene	*33.27*	1.0	*30*	0	*111*	*77-129*	0			
Surr: Trifluorotoluene	*31.21*	1.0	*30*	0	*104*	*75-130*	0			

MSD Sample ID: **1102702-04AMSD** Units: **µg/L** Analysis Date: **3/1/2011 11:45 AM**

Client ID: Run ID: **BTEX1_110228D** SeqNo: **2294100** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23.68	1.0	20	0	118	77-126	24.23	2.27	20	
Toluene	24.76	1.0	20	0	124	80-124	24.77	0.0257	20	
Ethylbenzene	25.18	1.0	20	0	126	76-125	25.14	0.164	20	S
Xylenes, Total	73.08	3.0	60	0	122	79-124	72.97	0.162	20	
Surr: 4-Bromofluorobenzene	*33.49*	1.0	*30*	0	*112*	*77-129*	33.27	*0.651*	*20*	
Surr: Trifluorotoluene	*31.34*	1.0	*30*	0	*104*	*75-130*	31.21	*0.422*	*20*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Premier Environmental Services
Work Order: 1102701
Project: Vacuum to Jal #5

QC BATCH REPORT

Batch ID: **R106038** Instrument ID **BTEX1** Method: **SW8021B**

The following samples were analyzed in this batch:

1102701-01A	1102701-02A	1102701-03A
1102701-04A	1102701-05A	1102701-06A
1102701-07A	1102701-08A	1102701-09A
1102701-10A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Premier Environmental Services
Project: Vacuum to Jal #5
WorkOrder: 1102701

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Laboratory Group
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

ALS Laboratory Group
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager: | ALS Work Order #: 107701

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Vacuum to Jal #5	A	BTEX (8021)
Work Order		Project Number	205069	B	
Company Name	Premier Environmental Services	Bill To Company	Plains All America, LP	C	
Send Report To	Chan Patel	Invoice Attn		D	
Address	4800 Sugar Grove Blvd. Suite 390	Address	c/o ENV. Accounts Payable P.O. Box 4648	E	
City/State/Zip	Houston, TX 77477	City/State/Zip	Houston, TX 77210-4648	F	
Phone	(281) 240-5200	Phone	(713) 646-4610	G	
Fax	(281) 240-5201	Fax	(713) 646-4199	H	
e-Mail Address		e-Mail Address		I	
				J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	RW4	2-23-11	11:50	G.W.	HCl	3	x										
2	RW5		11:35														
3	RW6		11:30														
4	MW1		12:00														
5	MW2		11:55														
6	MW3		11:40														
7	MW4		11:45														
8	MW5		11:25														
9	MW6		12:10														
10	MW7		12:05														

Sampler(s) Please Print & Sign: Matt Grubbs, Shane Miller

Shipment Method: FedEx

Required Turnaround Time: (Check Box) ☐ Other ☐ Std 10 WK Days ☑ 5 WK Days ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Matt Grubbs	2-31-11	17:30	FedEx
Relinquished by:	Date:	Time:	Received by (Laboratory): 2/24/11 08:50
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: 5 Day TAT.

Cooler ID | Cooler Temp.

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other / EDD _____
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.
2. Unless otherwise agreed in a formal contract, services provided by ALS Laboratory Group are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental

Sample Receipt Checklist

Client Name: **PREMIER ENV** Date/Time Received: **24-Feb-11 08:50**

Work Order: **1102701** Received by: **SAY**

Checklist completed by Salvador A. Yanez (eSignature) 24-Feb-11 (Date) Reviewed by: Jay Lynn F Thibault (eSignature) 27-Feb-11 (Date)

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	0.9c	002	
Cooler(s)/Kit(s):	1914		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: Trip Blank not on COC, Login w/ out Analysis.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL

Date: 2-23-11 Time: 17:30
Name: Mayra Garcia
Company: Premier

Seal Broken By:
Date: 2/24/11

1102701

This portion can be removed for Recipient's records.

Date 2-23-11 FedEx Tracking Number 874763320019

Sender's Name Phone

Company

Address

Dept/Floor/Suite/Room

City State ZIP

Your Internal Billing Reference

ALS Environmental

07-Jun-2011

Chan Patel
Premier Environmental Services
4800 Sugar Grove Blvd.
Suite 390
Houston, TX 77477

Tel: (281) 240-5200
Fax: (770) 973-7395

Re: Vacuum to Jal#5 Work Order: **1106050**

Dear Chan,

ALS Environmental received 14 samples on 02-Jun-2011 08:55 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 23.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Patricia L. Lynch

Electronically approved by: Makenzie L. Henderson

Patricia L. Lynch
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: T104704231-09A-TX

ALS Environmental

Date: 07-Jun-11

Client: Premier Environmental Services
Project: Vacuum to Jal#5
Work Order: **1106050**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1106050-01	MW1	Water		6/1/2011 14:50	6/2/2011 08:55	☐
1106050-02	MW2	Water		6/1/2011 15:20	6/2/2011 08:55	☐
1106050-03	MW3	Water		6/1/2011 15:35	6/2/2011 08:55	☐
1106050-04	MW4	Water		6/1/2011 11:25	6/2/2011 08:55	☐
1106050-05	MW5	Water		6/1/2011 16:45	6/2/2011 08:55	☐
1106050-06	MW6	Water		6/1/2011 16:50	6/2/2011 08:55	☐
1106050-07	MW7	Water		6/1/2011 15:55	6/2/2011 08:55	☐
1106050-08	RW1	Water		6/1/2011 12:12	6/2/2011 08:55	☐
1106050-09	RW2	Water		6/1/2011 12:50	6/2/2011 08:55	☐
1106050-10	RW3	Water		6/1/2011 13:55	6/2/2011 08:55	☐
1106050-11	RW4	Water		6/1/2011 16:55	6/2/2011 08:55	☐
1106050-12	RW5	Water		6/1/2011 17:00	6/2/2011 08:55	☐
1106050-13	RW6	Water		6/1/2011 17:05	6/2/2011 08:55	☐
1106050-14	Trip Blank	Water		6/1/2011	6/2/2011 08:55	☐

ALS Environmental

Date: 09-Jun-11

Client:	Premier Environmental Services
Project:	Vacuum to Jal#5
Work Order:	1106050

Case Narrative

No exceptions were encountered during analysis of samples in this work-order.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5 **Work Order:** 1106050
Sample ID: MW1 **Lab ID:** 1106050-01
Collection Date: 6/1/2011 02:50 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.00040**	J	**0.0010**	**mg/L**	1	6/3/2011 10:50 AM
Toluene	U		0.0010	mg/L	1	6/3/2011 10:50 AM
Ethylbenzene	U		0.0010	mg/L	1	6/3/2011 10:50 AM
Xylenes, Total	U		0.0030	mg/L	1	6/3/2011 10:50 AM
Surr: 4-Bromofluorobenzene	*103*		*77-129*	*%REC*	1	6/3/2011 10:50 AM
Surr: Trifluorotoluene	*110*		*75-130*	*%REC*	1	6/3/2011 10:50 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5 **Work Order:** 1106050
Sample ID: MW2 **Lab ID:** 1106050-02
Collection Date: 6/1/2011 03:20 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	U		0.0010	mg/L	1	6/3/2011 11:08 AM
Toluene	U		0.0010	mg/L	1	6/3/2011 11:08 AM
Ethylbenzene	U		0.0010	mg/L	1	6/3/2011 11:08 AM
Xylenes, Total	U		0.0030	mg/L	1	6/3/2011 11:08 AM
Surr: 4-Bromofluorobenzene	*96.6*		*77-129*	*%REC*	1	6/3/2011 11:08 AM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	6/3/2011 11:08 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5 **Work Order:** 1106050
Sample ID: MW3 **Lab ID:** 1106050-03
Collection Date: 6/1/2011 03:35 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	U		0.0010	mg/L	1	6/3/2011 11:26 AM
Toluene	U		0.0010	mg/L	1	6/3/2011 11:26 AM
Ethylbenzene	U		0.0010	mg/L	1	6/3/2011 11:26 AM
Xylenes, Total	U		0.0030	mg/L	1	6/3/2011 11:26 AM
Surr: 4-Bromofluorobenzene	*99.0*		*77-129*	*%REC*	1	6/3/2011 11:26 AM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	6/3/2011 11:26 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services

Project: Vacuum to Jal#5 **Work Order:** 1106050

Sample ID: MW4 **Lab ID:** 1106050-04

Collection Date: 6/1/2011 11:25 AM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	U		0.0010	mg/L	1	6/3/2011 11:44 AM
Toluene	U		0.0010	mg/L	1	6/3/2011 11:44 AM
Ethylbenzene	U		0.0010	mg/L	1	6/3/2011 11:44 AM
Xylenes, Total	U		0.0030	mg/L	1	6/3/2011 11:44 AM
Surr: 4-Bromofluorobenzene	*101*		*77-129*	*%REC*	1	6/3/2011 11:44 AM
Surr: Trifluorotoluene	*109*		*75-130*	*%REC*	1	6/3/2011 11:44 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5 **Work Order:** 1106050
Sample ID: MW5 **Lab ID:** 1106050-05
Collection Date: 6/1/2011 04:45 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	U		0.0010	mg/L	1	6/3/2011 12:02 PM
Toluene	U		0.0010	mg/L	1	6/3/2011 12:02 PM
Ethylbenzene	U		0.0010	mg/L	1	6/3/2011 12:02 PM
Xylenes, Total	U		0.0030	mg/L	1	6/3/2011 12:02 PM
Surr: 4-Bromofluorobenzene	*99.2*		*77-129*	*%REC*	1	6/3/2011 12:02 PM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	6/3/2011 12:02 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5
Work Order: 1106050
Sample ID: MW6
Lab ID: 1106050-06
Collection Date: 6/1/2011 04:50 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	U		0.0010	mg/L	1	6/3/2011 12:20 PM
Toluene	U		0.0010	mg/L	1	6/3/2011 12:20 PM
Ethylbenzene	U		0.0010	mg/L	1	6/3/2011 12:20 PM
Xylenes, Total	U		0.0030	mg/L	1	6/3/2011 12:20 PM
Surr: 4-Bromofluorobenzene	*97.0*		*77-129*	*%REC*	1	6/3/2011 12:20 PM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	6/3/2011 12:20 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5 **Work Order:** 1106050
Sample ID: MW7 **Lab ID:** 1106050-07
Collection Date: 6/1/2011 03:55 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	U		0.0010	mg/L	1	6/3/2011 12:38 PM
Toluene	U		0.0010	mg/L	1	6/3/2011 12:38 PM
Ethylbenzene	U		0.0010	mg/L	1	6/3/2011 12:38 PM
Xylenes, Total	U		0.0030	mg/L	1	6/3/2011 12:38 PM
Surr: 4-Bromofluorobenzene	*98.7*		*77-129*	*%REC*	1	6/3/2011 12:38 PM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	6/3/2011 12:38 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5 **Work Order:** 1106050
Sample ID: RW1 **Lab ID:** 1106050-08
Collection Date: 6/1/2011 12:12 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.066**		**0.0010**	**mg/L**	1	6/3/2011 07:25 PM
Toluene	**0.016**		**0.0010**	**mg/L**	1	6/3/2011 07:25 PM
Ethylbenzene	**0.057**		**0.0010**	**mg/L**	1	6/3/2011 07:25 PM
Xylenes, Total	**0.18**		**0.0030**	**mg/L**	1	6/3/2011 07:25 PM
Surr: 4-Bromofluorobenzene	*103*		*77-129*	*%REC*	1	6/3/2011 07:25 PM
Surr: Trifluorotoluene	*118*		*75-130*	*%REC*	1	6/3/2011 07:25 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5 **Work Order:** 1106050
Sample ID: RW2 **Lab ID:** 1106050-09
Collection Date: 6/1/2011 12:50 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.034**		**0.025**	**mg/L**	25	6/3/2011 05:54 PM
Toluene	**0.038**		**0.025**	**mg/L**	25	6/3/2011 05:54 PM
Ethylbenzene	**0.051**		**0.025**	**mg/L**	25	6/3/2011 05:54 PM
Xylenes, Total	**0.14**		**0.075**	**mg/L**	25	6/3/2011 05:54 PM
Surr: 4-Bromofluorobenzene	*101*		*77-129*	*%REC*	25	6/3/2011 05:54 PM
Surr: Trifluorotoluene	*106*		*75-130*	*%REC*	25	6/3/2011 05:54 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5 **Work Order:** 1106050
Sample ID: RW3 **Lab ID:** 1106050-10
Collection Date: 6/1/2011 01:55 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	**0.21**		**0.025**	**mg/L**	25	6/3/2011 06:12 PM
Toluene	**0.20**		**0.025**	**mg/L**	25	6/3/2011 06:12 PM
Ethylbenzene	**0.18**		**0.025**	**mg/L**	25	6/3/2011 06:12 PM
Xylenes, Total	**0.39**		**0.075**	**mg/L**	25	6/3/2011 06:12 PM
Surr: 4-Bromofluorobenzene	*105*		*77-129*	*%REC*	25	6/3/2011 06:12 PM
Surr: Trifluorotoluene	*109*		*75-130*	*%REC*	25	6/3/2011 06:12 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5 **Work Order:** 1106050
Sample ID: RW4 **Lab ID:** 1106050-11
Collection Date: 6/1/2011 04:55 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	U		0.0010	mg/L	1	6/3/2011 07:07 PM
Toluene	U		0.0010	mg/L	1	6/3/2011 07:07 PM
Ethylbenzene	U		0.0010	mg/L	1	6/3/2011 07:07 PM
Xylenes, Total	U		0.0030	mg/L	1	6/3/2011 07:07 PM
Surr: 4-Bromofluorobenzene	*97.7*		*77-129*	*%REC*	1	6/3/2011 07:07 PM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	6/3/2011 07:07 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5 **Work Order:** 1106050
Sample ID: RW5 **Lab ID:** 1106050-12
Collection Date: 6/1/2011 05:00 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	U		0.0010	mg/L	1	6/3/2011 12:56 PM
Toluene	U		0.0010	mg/L	1	6/3/2011 12:56 PM
Ethylbenzene	U		0.0010	mg/L	1	6/3/2011 12:56 PM
Xylenes, Total	U		0.0030	mg/L	1	6/3/2011 12:56 PM
Surr: 4-Bromofluorobenzene	*99.4*		*77-129*	*%REC*	1	6/3/2011 12:56 PM
Surr: Trifluorotoluene	*107*		*75-130*	*%REC*	1	6/3/2011 12:56 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Jun-11*

Client: Premier Environmental Services
Project: Vacuum to Jal#5
Work Order: 1106050
Sample ID: RW6
Lab ID: 1106050-13
Collection Date: 6/1/2011 05:05 PM
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **KKP**
Benzene	U		0.0010	mg/L	1	6/3/2011 02:17 PM
Toluene	U		0.0010	mg/L	1	6/3/2011 02:17 PM
Ethylbenzene	U		0.0010	mg/L	1	6/3/2011 02:17 PM
Xylenes, Total	U		0.0030	mg/L	1	6/3/2011 02:17 PM
Surr: 4-Bromofluorobenzene	*101*		*77-129*	*%REC*	1	6/3/2011 02:17 PM
Surr: Trifluorotoluene	*109*		*75-130*	*%REC*	1	6/3/2011 02:17 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 07-Jun-11

Client: Premier Environmental Services

Work Order: 1106050

Project: Vacuum to Jal#5

QC BATCH REPORT

Batch ID: **R110872** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-060311-R110872** Units: **µg/L** Analysis Date: **6/3/2011 10:31 AM**

Client ID: Run ID: **BTEX1_110603A** SeqNo: **2411760** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	1.0								
Toluene	U	1.0								
Ethylbenzene	U	1.0								
Xylenes, Total	U	3.0								
Surr: 4-Bromofluorobenzene	*30.33*	1.0	*30*	0	*101*	*77-129*	0			
Surr: Trifluorotoluene	*33.13*	1.0	*30*	0	*110*	*75-130*	0			

LCS Sample ID: **BLCSW1-060311-R110872** Units: **µg/L** Analysis Date: **6/3/2011 09:49 AM**

Client ID: Run ID: **BTEX1_110603A** SeqNo: **2411759** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.34	1.0	20	0	86.7	77-126	0			
Toluene	17.39	1.0	20	0	87	80-124	0			
Ethylbenzene	18.1	1.0	20	0	90.5	76-125	0			
Xylenes, Total	53.99	3.0	60	0	90	79-124	0			
Surr: 4-Bromofluorobenzene	*31.61*	1.0	*30*	0	*105*	*77-129*	0			
Surr: Trifluorotoluene	*34.6*	1.0	*30*	0	*115*	*75-130*	0			

MS Sample ID: **1105885-01AMS** Units: **µg/L** Analysis Date: **6/3/2011 04:06 PM**

Client ID: Run ID: **BTEX1_110603A** SeqNo: **2411826** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.87	1.0	20	0.317	97.8	77-126	0			
Toluene	20.58	1.0	20	0.2585	102	80-124	0			
Ethylbenzene	21.08	1.0	20	0	105	76-125	0			
Xylenes, Total	62.27	3.0	60	0	104	79-124	0			
Surr: 4-Bromofluorobenzene	*30.13*	1.0	*30*	0	*100*	*77-129*	0			
Surr: Trifluorotoluene	*33.41*	1.0	*30*	0	*111*	*75-130*	0			

MSD Sample ID: **1105885-01AMSD** Units: **µg/L** Analysis Date: **6/3/2011 04:24 PM**

Client ID: Run ID: **BTEX1_110603A** SeqNo: **2411827** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.94	1.0	20	0.317	98.1	77-126	19.87	0.349	20	
Toluene	20.13	1.0	20	0.2585	99.4	80-124	20.58	2.19	20	
Ethylbenzene	20.95	1.0	20	0	105	76-125	21.08	0.615	20	
Xylenes, Total	62.12	3.0	60	0	104	79-124	62.27	0.241	20	
Surr: 4-Bromofluorobenzene	*30.56*	1.0	*30*	0	*102*	*77-129*	30.13	*1.44*	*20*	
Surr: Trifluorotoluene	*33.22*	1.0	*30*	0	*111*	*75-130*	33.41	*0.58*	*20*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Premier Environmental Services
Work Order: 1106050
Project: Vacuum to Jal#5

QC BATCH REPORT

Batch ID: **R110872** Instrument ID **BTEX1** Method: **SW8021B**

The following samples were analyzed in this batch:

1106050-01A	1106050-02A	1106050-03A
1106050-04A	1106050-05A	1106050-06A
1106050-07A	1106050-08A	1106050-09A
1106050-10A	1106050-11A	1106050-12A
1106050-13A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Premier Environmental Services
Project: Vacuum to Jal#5
WorkOrder: **1106050**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

Page 1 of 2

COC ID: 33461

1106050

PREMIER ENV: Premier Environmental Services

Project: Vacuum to Jal#5

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Vacuum to Jal #5	A	BTEX (8021)
Work Order		Project Number		B	
Company Name	Premier Environmental Services	Bill To Company	Plains All America, LP	C	
Send Report To	Chan Patel	Invoice Attn		D	
Address	4000 Sugar Grove Blvd. Suite 390	Address	c/o ENV. Accounts Payable P.O. Box 4648	E	
				F	
City/State/Zip	Houston, TX 77477	City/State/Zip	Houston, TX 77210-4648	G	
Phone	(281) 240-5200	Phone	(713) 646-4610	H	
Fax	(281) 240-5201	Fax	(713) 646-4199	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW1	6-1	1450	W	HCl	3	X										
2	MW2		1520														
3	MW3		1535														
4	MW4		1125														
5	MW5		1645														
6	MW6		1650														
7	MW7		1555														
8	~~SAMPLE 8~~ RW1		1212														
9	~~SAMPLE 9~~ RW2	↓	1250	↓	↓	↓	↓										
10	RW3	6-1	1355	W	HCl	3	X										

Sampler(s) Please Print & Sign: SHANE ADCOCK

Shipment Method:

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☑ 5 WK Days ☐ Other ____ ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Notes: 5 Day TAT.
Shane Adcock	6-1	1830		
Relinquished by:	Date:	Time:	Received by (Laboratory): 6/2/4 08:15	Cooler ID / Cooler Temp.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ TRRP CheckList
- ☐ Level III Std QC/Raw Data
- ☐ TRRP Level IV
- ☐ Level IV SW846/CLP
- ☐ Other / EDD ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note:
1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated
3. The Chain of Custody is a legal document. All information must be complete

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
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Chain of Custody Form

Page 2 of 2

COC ID: 33460

ALS Environmental
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager:		ALS Work Order #:	

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Vacuum to Jal #5	A	BTEX (8021)
Work Order		Project Number		B	
Company Name	Premier Environmental Services	Bill To Company	Plains All America, LP	C	
Send Report To	Chan Patel	Invoice Attn		D	
Address	4800 Sugar Grove Blvd. Suite 390	Address	c/o ENV. Accounts Payable P.O. Box 4648	E	
				F	
City/State/Zip	Houston, TX 77477	City/State/Zip	Houston, TX 77210-4648	G	
Phone	(281) 240-5200	Phone	(713) 646-4610	H	
Fax	(281) 240-5201	Fax	(713) 646-4199	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	RW 4	SAD ~~6-5~~ 6-1	1655	W	HCl	3	X										
2	RW 5	SAD ~~7~~ 6-1	1700	W	HCL	3	X										
3	RW 6	SAD ~~7~~ 6-1	1705	W	HCL	3	X										
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: SHANE A DILLER

Shipment Method: FED EX

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☑ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Shane A. Diller	6-1	1630	
Relinquished by:	Date:	Time:	Received by (Laboratory): 6/2/11
			08:30
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: 5 Day TAT.

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☑ Level II Std QC ☐ TRRP CheckLis
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other / EDD

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental

Sample Receipt Checklist

Client Name: **PREMIER ENV** Date/Time Received: **02-Jun-11 08:55**

Work Order: **1106050** Received by: **RNG**

Checklist completed by Salvador A. Yanez eSignature 02-Jun-11 Date Reviewed by: Patricia L. Lynch eSignature 06-Jun-11 Date

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☑	Not Present ☐
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.4c	002	
Cooler(s)/Kit(s):	3560		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: Trip Blank not on COC, Login w/ out Analysis.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

1106050

#704265 06/01 50DG1/0C80/7EFB

te | FedEx Tracking Number 87

nder's me | Phone

Company

Address

Dept/Floor/Suite/Room

State | ZIP

ur Internal Billing Reference

LS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530-5656
Fax. +1 281 530-5887

Date:
Name:
Company:

CUSTODY SEAL

Time: 18:00

Matt Grubbs

Premier

Seal Broken By:

Date:

ALS Environmental

07-Sep-2011

Chan Patel
EarthCon Consultants, Inc.
4800 Sugar Grove Blvd.
Suite 390
Houston, TX 77477

Tel: (281) 240-5200
Fax: (770) 973-7395

Re: Vac To Jal #5 Work Order: **11081008**

Dear Chan,

ALS Environmental received 11 samples on 31-Aug-2011 09:05 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 19.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Patricia L. Lynch

Electronically approved by: Makenzie L. Henderson

Patricia L. Lynch
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: T104704231-09A-TX

ALS Environmental

Date: 07-Sep-11

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5
Work Order: **11081008**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
11081008-01	MW1	Water		8/30/2011 13:20	8/31/2011 09:05	☐
11081008-02	MW2	Water		8/30/2011 13:15	8/31/2011 09:05	☐
11081008-03	MW3	Water		8/30/2011 13:20	8/31/2011 09:05	☐
11081008-04	MW4	Water		8/30/2011 13:25	8/31/2011 09:05	☐
11081008-05	MW5	Water		8/30/2011 13:30	8/31/2011 09:05	☐
11081008-06	MW6	Water		8/30/2011 13:35	8/31/2011 09:05	☐
11081008-07	MW7	Water		8/30/2011 13:40	8/31/2011 09:05	☐
11081008-08	RW4	Water		8/30/2011 13:45	8/31/2011 09:05	☐
11081008-09	RW5	Water		8/30/2011 13:50	8/31/2011 09:05	☐
11081008-10	RW6	Water		8/30/2011 13:55	8/31/2011 09:05	☐
11081008-11	Trip Blank	Water		8/30/2011	8/31/2011 09:05	☐

Client:	EarthCon Consultants, Inc.
Project:	Vac To Jal #5
Work Order:	11081008

Case Narrative

Batch R115651 BTEX: MS/MSD was an unrelated sample.

ALS Environmental

Date: *07-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5 **Work Order:** 11081008
Sample ID: MW1 **Lab ID:** 11081008-01
Collection Date: 8/30/2011 01:20 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	9/6/2011 04:30 PM
Toluene	ND		0.0010	mg/L	1	9/6/2011 04:30 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/6/2011 04:30 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/6/2011 04:30 PM
Surr: 4-Bromofluorobenzene	*87.0*		*77-129*	*%REC*	1	9/6/2011 04:30 PM
Surr: Trifluorotoluene	*106*		*75-130*	*%REC*	1	9/6/2011 04:30 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5 **Work Order:** 11081008
Sample ID: MW2 **Lab ID:** 11081008-02
Collection Date: 8/30/2011 01:15 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	9/6/2011 04:48 PM
Toluene	ND		0.0010	mg/L	1	9/6/2011 04:48 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/6/2011 04:48 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/6/2011 04:48 PM
Surr: 4-Bromofluorobenzene	*89.5*		*77-129*	*%REC*	1	9/6/2011 04:48 PM
Surr: Trifluorotoluene	*110*		*75-130*	*%REC*	1	9/6/2011 04:48 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5 **Work Order:** 11081008
Sample ID: MW3 **Lab ID:** 11081008-03
Collection Date: 8/30/2011 01:20 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	9/6/2011 05:05 PM
Toluene	ND		0.0010	mg/L	1	9/6/2011 05:05 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/6/2011 05:05 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/6/2011 05:05 PM
Surr: 4-Bromofluorobenzene	*89.4*		*77-129*	*%REC*	1	9/6/2011 05:05 PM
Surr: Trifluorotoluene	*110*		*75-130*	*%REC*	1	9/6/2011 05:05 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5 **Work Order:** 11081008
Sample ID: MW4 **Lab ID:** 11081008-04
Collection Date: 8/30/2011 01:25 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	9/6/2011 05:22 PM
Toluene	ND		0.0010	mg/L	1	9/6/2011 05:22 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/6/2011 05:22 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/6/2011 05:22 PM
Surr: 4-Bromofluorobenzene	*88.0*		*77-129*	*%REC*	1	9/6/2011 05:22 PM
Surr: Trifluorotoluene	*109*		*75-130*	*%REC*	1	9/6/2011 05:22 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5 **Work Order:** 11081008
Sample ID: MW5 **Lab ID:** 11081008-05
Collection Date: 8/30/2011 01:30 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	9/6/2011 05:40 PM
Toluene	ND		0.0010	mg/L	1	9/6/2011 05:40 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/6/2011 05:40 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/6/2011 05:40 PM
Surr: 4-Bromofluorobenzene	*86.9*		*77-129*	*%REC*	1	9/6/2011 05:40 PM
Surr: Trifluorotoluene	*108*		*75-130*	*%REC*	1	9/6/2011 05:40 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5 **Work Order:** 11081008
Sample ID: MW6 **Lab ID:** 11081008-06
Collection Date: 8/30/2011 01:35 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	9/6/2011 06:32 PM
Toluene	ND		0.0010	mg/L	1	9/6/2011 06:32 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/6/2011 06:32 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/6/2011 06:32 PM
Surr: 4-Bromofluorobenzene	*90.3*		*77-129*	*%REC*	1	9/6/2011 06:32 PM
Surr: Trifluorotoluene	*112*		*75-130*	*%REC*	1	9/6/2011 06:32 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Sep-11*

Client:	EarthCon Consultants, Inc.		
Project:	Vac To Jal #5	**Work Order:**	11081008
Sample ID:	MW7	**Lab ID:**	11081008-07
Collection Date:	8/30/2011 01:40 PM	**Matrix:**	WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	9/6/2011 06:49 PM
Toluene	ND		0.0010	mg/L	1	9/6/2011 06:49 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/6/2011 06:49 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/6/2011 06:49 PM
Surr: 4-Bromofluorobenzene	*88.1*		*77-129*	*%REC*	1	9/6/2011 06:49 PM
Surr: Trifluorotoluene	*110*		*75-130*	*%REC*	1	9/6/2011 06:49 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5 **Work Order:** 11081008
Sample ID: RW4 **Lab ID:** 11081008-08
Collection Date: 8/30/2011 01:45 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	9/6/2011 07:07 PM
Toluene	ND		0.0010	mg/L	1	9/6/2011 07:07 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/6/2011 07:07 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/6/2011 07:07 PM
Surr: 4-Bromofluorobenzene	*91.6*		*77-129*	*%REC*	1	9/6/2011 07:07 PM
Surr: Trifluorotoluene	*114*		*75-130*	*%REC*	1	9/6/2011 07:07 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5 **Work Order:** 11081008
Sample ID: RW5 **Lab ID:** 11081008-09
Collection Date: 8/30/2011 01:50 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	9/6/2011 07:24 PM
Toluene	ND		0.0010	mg/L	1	9/6/2011 07:24 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/6/2011 07:24 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/6/2011 07:24 PM
Surr: 4-Bromofluorobenzene	*91.1*		*77-129*	*%REC*	1	9/6/2011 07:24 PM
Surr: Trifluorotoluene	*110*		*75-130*	*%REC*	1	9/6/2011 07:24 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *07-Sep-11*

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5 **Work Order:** 11081008
Sample ID: RW6 **Lab ID:** 11081008-10
Collection Date: 8/30/2011 01:55 PM **Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	9/6/2011 07:41 PM
Toluene	ND		0.0010	mg/L	1	9/6/2011 07:41 PM
Ethylbenzene	ND		0.0010	mg/L	1	9/6/2011 07:41 PM
Xylenes, Total	ND		0.0030	mg/L	1	9/6/2011 07:41 PM
Surr: 4-Bromofluorobenzene	*88.7*		*77-129*	*%REC*	1	9/6/2011 07:41 PM
Surr: Trifluorotoluene	*111*		*75-130*	*%REC*	1	9/6/2011 07:41 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 07-Sep-11

Client: EarthCon Consultants, Inc.

Work Order: 11081008

Project: Vac To Jal #5

QC BATCH REPORT

Batch ID: **R115651** Instrument ID **BTEX3** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-110906-R115651** Units: **µg/L** Analysis Date: **9/6/2011 12:27 PM**

Client ID: Run ID: **BTEX3_110906B** SeqNo: **2515846** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	*27.86*	1.0	*30*	0	*92.9*	*77-129*	0			
Surr: Trifluorotoluene	*34.08*	1.0	*30*	0	*114*	*75-130*	0			

LCS Sample ID: **BLCSW1-110906-R115651** Units: **µg/L** Analysis Date: **9/6/2011 11:35 AM**

Client ID: Run ID: **BTEX3_110906B** SeqNo: **2515839** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.31	1.0	20	0	107	77-126	0			
Toluene	21.72	1.0	20	0	109	80-124	0			
Ethylbenzene	22.01	1.0	20	0	110	76-125	0			
Xylenes, Total	65.66	3.0	60	0	109	79-124	0			
Surr: 4-Bromofluorobenzene	*28.26*	1.0	*30*	0	*94.2*	*77-129*	0			
Surr: Trifluorotoluene	*34.14*	1.0	*30*	0	*114*	*75-130*	0			

LCSD Sample ID: **BLCSDW1-110906-R115651** Units: **µg/L** Analysis Date: **9/6/2011 11:52 AM**

Client ID: Run ID: **BTEX3_110906B** SeqNo: **2515842** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.61	1.0	20	0	108	77-126	21.31	1.38	20	
Toluene	22.21	1.0	20	0	111	80-124	21.72	2.24	20	
Ethylbenzene	22.52	1.0	20	0	113	76-125	22.01	2.28	20	
Xylenes, Total	66.85	3.0	60	0	111	79-124	65.66	1.81	20	
Surr: 4-Bromofluorobenzene	*29.13*	1.0	*30*	0	*97.1*	*77-129*	28.26	*3.03*	*20*	
Surr: Trifluorotoluene	*35.22*	1.0	*30*	0	*117*	*75-130*	34.14	*3.11*	*20*	

MS Sample ID: **1109139-02AMS** Units: **µg/L** Analysis Date: **9/6/2011 02:28 PM**

Client ID: Run ID: **BTEX3_110906B** SeqNo: **2516183** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	29.63	1.0	20	78.88	-246	77-126	0			S
Toluene	22.56	1.0	20	0	113	80-124	0			
Ethylbenzene	21.87	1.0	20	0	109	76-125	0			
Xylenes, Total	63.59	3.0	60	0	106	79-124	0			
Surr: 4-Bromofluorobenzene	*29.57*	1.0	*30*	0	*98.6*	*77-129*	0			
Surr: Trifluorotoluene	*35.4*	1.0	*30*	0	*118*	*75-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Work Order: 11081008
Project: Vac To Jal #5

QC BATCH REPORT

Batch ID: **R115651** Instrument ID **BTEX3** Method: **SW8021B**

MSD Sample ID: **1109139-02AMSD** Units: **µg/L** Analysis Date: **9/6/2011 02:46 PM**

Client ID: Run ID: **BTEX3_110906B** SeqNo: **2516184** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	28.91	1.0	20	78.88	-250	77-126	29.63	2.48	20	S
Toluene	21.87	1.0	20	0	109	80-124	22.56	3.13	20	
Ethylbenzene	20.71	1.0	20	0	104	76-125	21.87	5.45	20	
Xylenes, Total	59.93	3.0	60	0	99.9	79-124	63.59	5.92	20	
Surr: 4-Bromofluorobenzene	*29.15*	1.0	*30*	0	*97.2*	*77-129*	29.57	*1.41*	*20*	
Surr: Trifluorotoluene	*35.21*	1.0	*30*	0	*117*	*75-130*	35.4	*0.551*	*20*	

The following samples were analyzed in this batch:

11081008-01A	11081008-02A	11081008-03A
11081008-04A	11081008-05A	11081008-06A
11081008-07A	11081008-08A	11081008-09A
11081008-10A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 07-Sep-11

Client: EarthCon Consultants, Inc.
Project: Vac To Jal #5
WorkOrder: **11081008**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Laboratory Group
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody Form

11081008

Page 1 of 1

PREMIER ENV: EarthCon Consultants, Inc.

Project: Vac Total 5

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Vac total 5	A	BTEX (8021)
Work Order		Project Number	205068	B	
Company Name	Earthcon	Bill To Company	Plains All American, LP	C	
Send Report To	Chan Patel	Invoice Attn		D	
Address	4800 Sugar Grove Blvd Suite 390	Address	c/o Environmental Accounts Payable PO Box 4648	E	
				F	
City/State/Zip	Houston TX 77477	City/State/Zip	Houston, TX 77210-4648	G	
Phone	281 240 5200	Phone	713 646-4610	H	
Fax	281 240 5201	Fax	713 646 4199	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW1	4-30-11	13:10	GW	HCL	3	X										
2	MW 2		13:15														
3	MW 3		13:20														
4	MW 4		13:25														
5	MW 5		13:30														
6	MW6		13:35														
7	MW7		13:40														
8	RW4		13:45														
9	RW5		13:50														
10	RW6		13:55														

Sampler(s) Please Print & Sign: Shane Miller Matt Grubbs

Shipment Method: FedEx

Required Turnaround Time: (Check Box) ☐ Other ____ ☐ STD 10 Wk Days ☑ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour

Results Due Date:

Relinquished by: Matt Grubbs	Date: 4-30-11	Time: 17:30	Received by: FedEx
Relinquished by: —	Date:	Time:	Received by (Laboratory): 8-31-11
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp
2161	

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Date
- ☐ Level IV SW846/CLP
- ☐ Other ____
- ☐ TRRP Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.
2. Unless otherwise agreed in a formal contract, services provided by ALS Laboratory Group are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental

Sample Receipt Checklist

Client Name: **PREMIER ENV** Date/Time Received: **31-Aug-11 09:05**

Work Order: **11081008** Received by: **PMG**

Checklist completed by Raymond N Gamboa (eSignature) 31-Aug-11 (Date) Reviewed by: Patricia L. Lynch (eSignature) 03-Sep-11 (Date)

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.5c	002	
Cooler(s)/Kit(s):	2161		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: Trip blank not on COC--logged in without analysis.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL

Date: 8-30-11 Time:
Name: Matt Grubbs
Company: Entrition

Seal Broken By:
Date:

This portion can be removed for Recipient's records.

FedEx Tracking Number 87669857

Sender's Name | Phone
Company
Address
City | State | ZIP
Your Internal Billing Reference

ALS Environmental

06-Dec-2011

Kathleen Buxton
EarthCon Consultants, Inc.
4800 Sugar Grove Blvd.
Suite 390
Houston, TX 77477

Tel: (281) 240-5200
Fax: (281) 240-5201

Re: Vac to Jal Mainline #5 Work Order: **1111901**

Dear Kathleen,

ALS Environmental received 11 samples on 30-Nov-2011 09:35 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 24.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Patricia L. Lynch

Electronically approved by: Yvan K. Ty

Patricia L. Lynch
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: TX: T104704231-11-5

ALS Environmental

Date: 06-Dec-11

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
Work Order: **1111901**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1111901-01	MW1	Groundwater		11/28/2011 15:30	11/30/2011 09:35	☐
1111901-02	MW2	Groundwater		11/28/2011 15:35	11/30/2011 09:35	☐
1111901-03	MW3	Groundwater		11/28/2011 15:40	11/30/2011 09:35	☐
1111901-04	MW4	Groundwater		11/28/2011 15:45	11/30/2011 09:35	☐
1111901-05	MW5	Groundwater		11/28/2011 15:50	11/30/2011 09:35	☐
1111901-06	MW6	Groundwater		11/28/2011 15:55	11/30/2011 09:35	☐
1111901-07	MW7	Groundwater		11/28/2011 16:00	11/30/2011 09:35	☐
1111901-08	RW4	Groundwater		11/28/2011 16:05	11/30/2011 09:35	☐
1111901-09	RW5	Groundwater		11/28/2011 16:10	11/30/2011 09:35	☐
1111901-10	RW6	Groundwater		11/28/2011 16:15	11/30/2011 09:35	☐
1111901-11	Trip Blank	Water		11/28/2011	11/30/2011 09:35	☐

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
Work Order: 1111901

Case Narrative

No exceptions.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
Work Order: 1111901
Sample ID: MW1
Lab ID: 1111901-01
Collection Date: 11/28/2011 03:30 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/2/2011 02:14 AM
Toluene	ND		0.0010	mg/L	1	12/2/2011 02:14 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/2/2011 02:14 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/2/2011 02:14 AM
Surr: 4-Bromofluorobenzene	*88.8*		*77-129*	*%REC*	1	12/2/2011 02:14 AM
Surr: Trifluorotoluene	*91.1*		*75-130*	*%REC*	1	12/2/2011 02:14 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
Work Order: 1111901
Sample ID: MW2
Lab ID: 1111901-02
Collection Date: 11/28/2011 03:35 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/2/2011 02:31 AM
Toluene	ND		0.0010	mg/L	1	12/2/2011 02:31 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/2/2011 02:31 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/2/2011 02:31 AM
Surr: 4-Bromofluorobenzene	*90.4*		*77-129*	*%REC*	1	12/2/2011 02:31 AM
Surr: Trifluorotoluene	*89.6*		*75-130*	*%REC*	1	12/2/2011 02:31 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5 **Work Order:** 1111901
Sample ID: MW3 **Lab ID:** 1111901-03
Collection Date: 11/28/2011 03:40 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/2/2011 02:48 AM
Toluene	ND		0.0010	mg/L	1	12/2/2011 02:48 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/2/2011 02:48 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/2/2011 02:48 AM
Surr: 4-Bromofluorobenzene	*91.0*		*77-129*	*%REC*	1	12/2/2011 02:48 AM
Surr: Trifluorotoluene	*91.6*		*75-130*	*%REC*	1	12/2/2011 02:48 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client:	EarthCon Consultants, Inc.		
Project:	Vac to Jal Mainline #5	**Work Order:**	1111901
Sample ID:	MW4	**Lab ID:**	1111901-04
Collection Date:	11/28/2011 03:45 PM	**Matrix:**	GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/2/2011 03:06 AM
Toluene	ND		0.0010	mg/L	1	12/2/2011 03:06 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/2/2011 03:06 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/2/2011 03:06 AM
Surr: 4-Bromofluorobenzene	*88.7*		*77-129*	*%REC*	1	12/2/2011 03:06 AM
Surr: Trifluorotoluene	*88.5*		*75-130*	*%REC*	1	12/2/2011 03:06 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
Work Order: 1111901
Sample ID: MW5
Lab ID: 1111901-05
Collection Date: 11/28/2011 03:50 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/2/2011 03:23 AM
Toluene	ND		0.0010	mg/L	1	12/2/2011 03:23 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/2/2011 03:23 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/2/2011 03:23 AM
Surr: 4-Bromofluorobenzene	*88.1*		*77-129*	*%REC*	1	12/2/2011 03:23 AM
Surr: Trifluorotoluene	*89.1*		*75-130*	*%REC*	1	12/2/2011 03:23 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
Work Order: 1111901
Sample ID: MW6
Lab ID: 1111901-06
Collection Date: 11/28/2011 03:55 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/2/2011 03:40 AM
Toluene	ND		0.0010	mg/L	1	12/2/2011 03:40 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/2/2011 03:40 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/2/2011 03:40 AM
Surr: 4-Bromofluorobenzene	*91.5*		*77-129*	*%REC*	1	12/2/2011 03:40 AM
Surr: Trifluorotoluene	*90.1*		*75-130*	*%REC*	1	12/2/2011 03:40 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
Work Order: 1111901
Sample ID: MW7
Lab ID: 1111901-07
Collection Date: 11/28/2011 04:00 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/2/2011 03:58 AM
Toluene	ND		0.0010	mg/L	1	12/2/2011 03:58 AM
Ethylbenzene	ND		0.0010	mg/L	1	12/2/2011 03:58 AM
Xylenes, Total	ND		0.0030	mg/L	1	12/2/2011 03:58 AM
Surr: 4-Bromofluorobenzene	*89.9*		*77-129*	*%REC*	1	12/2/2011 03:58 AM
Surr: Trifluorotoluene	*88.9*		*75-130*	*%REC*	1	12/2/2011 03:58 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5 **Work Order:** 1111901
Sample ID: RW4 **Lab ID:** 1111901-08
Collection Date: 11/28/2011 04:05 PM **Matrix:** GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/1/2011 07:18 PM
Toluene	ND		0.0010	mg/L	1	12/1/2011 07:18 PM
Ethylbenzene	ND		0.0010	mg/L	1	12/1/2011 07:18 PM
Xylenes, Total	ND		0.0030	mg/L	1	12/1/2011 07:18 PM
Surr: 4-Bromofluorobenzene	*89.8*		*77-129*	*%REC*	1	12/1/2011 07:18 PM
Surr: Trifluorotoluene	*90.3*		*75-130*	*%REC*	1	12/1/2011 07:18 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
Work Order: 1111901
Sample ID: RW5
Lab ID: 1111901-09
Collection Date: 11/28/2011 04:10 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/1/2011 07:35 PM
Toluene	ND		0.0010	mg/L	1	12/1/2011 07:35 PM
Ethylbenzene	ND		0.0010	mg/L	1	12/1/2011 07:35 PM
Xylenes, Total	ND		0.0030	mg/L	1	12/1/2011 07:35 PM
Surr: 4-Bromofluorobenzene	*90.3*		*77-129*	*%REC*	1	12/1/2011 07:35 PM
Surr: Trifluorotoluene	*90.3*		*75-130*	*%REC*	1	12/1/2011 07:35 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
Work Order: 1111901
Sample ID: RW6
Lab ID: 1111901-10
Collection Date: 11/28/2011 04:15 PM
Matrix: GROUNDWATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **SMA**
Benzene	ND		0.0010	mg/L	1	12/1/2011 07:53 PM
Toluene	ND		0.0010	mg/L	1	12/1/2011 07:53 PM
Ethylbenzene	ND		0.0010	mg/L	1	12/1/2011 07:53 PM
Xylenes, Total	ND		0.0030	mg/L	1	12/1/2011 07:53 PM
Surr: 4-Bromofluorobenzene	*90.3*		*77-129*	*%REC*	1	12/1/2011 07:53 PM
Surr: Trifluorotoluene	*89.9*		*75-130*	*%REC*	1	12/1/2011 07:53 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *06-Dec-11*

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
Work Order: 1111901
Sample ID: Trip Blank
Lab ID: 1111901-11
Collection Date: 11/28/2011
Matrix: WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
BTEX			**SW8021B**			Analyst: **JFT**
Benzene	ND		0.0010	mg/L	1	12/5/2011 12:40 PM
Toluene	ND		0.0010	mg/L	1	12/5/2011 12:40 PM
Ethylbenzene	ND		0.0010	mg/L	1	12/5/2011 12:40 PM
Xylenes, Total	ND		0.0030	mg/L	1	12/5/2011 12:40 PM
Surr: 4-Bromofluorobenzene	*92.0*		*77-129*	*%REC*	1	12/5/2011 12:40 PM
Surr: Trifluorotoluene	*84.4*		*75-130*	*%REC*	1	12/5/2011 12:40 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 06-Dec-11

Client: EarthCon Consultants, Inc.

QC BATCH REPORT

Work Order: 1111901

Project: Vac to Jal Mainline #5

Batch ID: **R120044** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-111201-R120044** Units: **µg/L** Analysis Date: **12/1/2011 11:16 AM**

Client ID: Run ID: **BTEX1_111201B** SeqNo: **2615139** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	*26.72*	1.0	*30*	0	*89.1*	*77-129*	0			
Surr: Trifluorotoluene	*27.17*	1.0	*30*	0	*90.6*	*75-130*	0			

LCS Sample ID: **BLCSW1-111201-R120044** Units: **µg/L** Analysis Date: **12/1/2011 10:23 AM**

Client ID: Run ID: **BTEX1_111201B** SeqNo: **2615137** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.77	1.0	20	0	109	77-126	0			
Toluene	22.26	1.0	20	0	111	80-124	0			
Ethylbenzene	21.88	1.0	20	0	109	76-125	0			
Xylenes, Total	65.27	3.0	60	0	109	79-124	0			
Surr: 4-Bromofluorobenzene	*26.91*	1.0	*30*	0	*89.7*	*77-129*	0			
Surr: Trifluorotoluene	*27.61*	1.0	*30*	0	*92*	*75-130*	0			

LCSD Sample ID: **BLCSDW1-111201-R120044** Units: **µg/L** Analysis Date: **12/1/2011 10:41 AM**

Client ID: Run ID: **BTEX1_111201B** SeqNo: **2615138** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.31	1.0	20	0	91.5	77-126	21.77	17.3	20	
Toluene	18.71	1.0	20	0	93.6	80-124	22.26	17.3	20	
Ethylbenzene	18.26	1.0	20	0	91.3	76-125	21.88	18.1	20	
Xylenes, Total	54.42	3.0	60	0	90.7	79-124	65.27	18.1	20	
Surr: 4-Bromofluorobenzene	*26.99*	1.0	*30*	0	*90*	*77-129*	26.91	*0.276*	*20*	
Surr: Trifluorotoluene	*28.09*	1.0	*30*	0	*93.6*	*75-130*	27.61	*1.75*	*20*	

MS Sample ID: **1111900-01AMS** Units: **µg/L** Analysis Date: **12/1/2011 12:25 PM**

Client ID: Run ID: **BTEX1_111201B** SeqNo: **2615141** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23	1.0	20	0	115	77-126	0			
Toluene	23.02	1.0	20	0	115	80-124	0			
Ethylbenzene	22.93	1.0	20	0	115	76-125	0			
Xylenes, Total	68.14	3.0	60	0	114	79-124	0			
Surr: 4-Bromofluorobenzene	*27.23*	1.0	*30*	0	*90.8*	*77-129*	0			
Surr: Trifluorotoluene	*27.92*	1.0	*30*	0	*93.1*	*75-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Work Order: 1111901
Project: Vac to Jal Mainline #5

QC BATCH REPORT

Batch ID: **R120044** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1111900-01AMSD** Units: **µg/L** Analysis Date: **12/1/2011 12:43 PM**

Client ID: Run ID: **BTEX1_111201B** SeqNo: **2615142** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.54	1.0	20	0	113	77-126	23	1.99	20	
Toluene	22.67	1.0	20	0	113	80-124	23.02	1.53	20	
Ethylbenzene	22.6	1.0	20	0	113	76-125	22.93	1.43	20	
Xylenes, Total	67.28	3.0	60	0	112	79-124	68.14	1.27	20	
Surr: 4-Bromofluorobenzene	*27.2*	1.0	*30*	0	*90.7*	*77-129*	27.23	*0.0784*	*20*	
Surr: Trifluorotoluene	*27.55*	1.0	*30*	0	*91.8*	*75-130*	27.92	*1.33*	*20*	

The following samples were analyzed in this batch: 1111901-08A 1111901-09A 1111901-10A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Work Order: 1111901
Project: Vac to Jal Mainline #5

QC BATCH REPORT

Batch ID: **R120084** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW2-111201-R120084** Units: **µg/L** Analysis Date: **12/1/2011 09:36 PM**
Client ID: Run ID: **BTEX1_111201C** SeqNo: **2616312** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	*26.42*	1.0	*30*	0	*88.1*	*77-129*	0			
Surr: Trifluorotoluene	*26.81*	1.0	*30*	0	*89.4*	*75-130*	0			

LCS Sample ID: **BLCSW2-111201-R120084** Units: **µg/L** Analysis Date: **12/1/2011 08:45 PM**
Client ID: Run ID: **BTEX1_111201C** SeqNo: **2616309** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.33	1.0	20	0	112	77-126	0			
Toluene	22.25	1.0	20	0	111	80-124	0			
Ethylbenzene	22.14	1.0	20	0	111	76-125	0			
Xylenes, Total	66.09	3.0	60	0	110	79-124	0			
Surr: 4-Bromofluorobenzene	*27.48*	1.0	*30*	0	*91.6*	*77-129*	0			
Surr: Trifluorotoluene	*27.87*	1.0	*30*	0	*92.9*	*75-130*	0			

LCSD Sample ID: **BLCSDW2-111201-R120084** Units: **µg/L** Analysis Date: **12/1/2011 09:02 PM**
Client ID: Run ID: **BTEX1_111201C** SeqNo: **2616310** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.99	1.0	20	0	110	77-126	22.33	1.51	20	
Toluene	21.9	1.0	20	0	110	80-124	22.25	1.59	20	
Ethylbenzene	21.73	1.0	20	0	109	76-125	22.14	1.87	20	
Xylenes, Total	65.02	3.0	60	0	108	79-124	66.09	1.64	20	
Surr: 4-Bromofluorobenzene	*27.7*	1.0	*30*	0	*92.3*	*77-129*	27.48	*0.765*	*20*	
Surr: Trifluorotoluene	*27.97*	1.0	*30*	0	*93.2*	*75-130*	27.87	*0.358*	*20*	

MS Sample ID: **1111901-07AMS** Units: **µg/L** Analysis Date: **12/2/2011 04:50 AM**
Client ID: **MW7** Run ID: **BTEX1_111201C** SeqNo: **2616335** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.93	1.0	20	0	115	77-126	0			
Toluene	22.94	1.0	20	0	115	80-124	0			
Ethylbenzene	22.61	1.0	20	0	113	76-125	0			
Xylenes, Total	67.06	3.0	60	0	112	79-124	0			
Surr: 4-Bromofluorobenzene	*27.2*	1.0	*30*	0	*90.7*	*77-129*	0			
Surr: Trifluorotoluene	*27.23*	1.0	*30*	0	*90.8*	*75-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Work Order: 1111901
Project: Vac to Jal Mainline #5

QC BATCH REPORT

Batch ID: **R120084** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1111901-07AMSD** Units: **µg/L** Analysis Date: **12/2/2011 05:07 AM**

Client ID: **MW7** Run ID: **BTEX1_111201C** SeqNo: **2616336** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23.06	1.0	20	0	115	77-126	22.93	0.561	20	
Toluene	23.04	1.0	20	0	115	80-124	22.94	0.439	20	
Ethylbenzene	22.73	1.0	20	0	114	76-125	22.61	0.508	20	
Xylenes, Total	67.36	3.0	60	0	112	79-124	67.06	0.454	20	
Surr: 4-Bromofluorobenzene	*27.7*	1.0	*30*	0	*92.3*	*77-129*	27.2	*1.81*	*20*	
Surr: Trifluorotoluene	*27.57*	1.0	*30*	0	*91.9*	*75-130*	27.23	*1.23*	*20*	

The following samples were analyzed in this batch:

1111901-01A	1111901-02A	1111901-03A
1111901-04A	1111901-05A	1111901-06A
1111901-07A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Work Order: 1111901
Project: Vac to Jal Mainline #5

QC BATCH REPORT

Batch ID: **R120134** Instrument ID **BTEX1** Method: **SW8021B**

MBLK Sample ID: **BBLKW1-111205-R120134** Units: **µg/L** Analysis Date: **12/5/2011 11:27 AM**
Client ID: Run ID: **BTEX1_111205A** SeqNo: **2617385** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 4-Bromofluorobenzene	*28.16*	1.0	*30*	0	*93.9*	*77-129*	0			
Surr: Trifluorotoluene	*25.62*	1.0	*30*	0	*85.4*	*75-130*	0			

LCS Sample ID: **BLCSW1-111205-R120134** Units: **µg/L** Analysis Date: **12/5/2011 10:34 AM**
Client ID: Run ID: **BTEX1_111205A** SeqNo: **2617383** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.94	1.0	20	0	105	77-126	0			
Toluene	20.57	1.0	20	0	103	80-124	0			
Ethylbenzene	20.75	1.0	20	0	104	76-125	0			
Xylenes, Total	63.5	3.0	60	0	106	79-124	0			
Surr: 4-Bromofluorobenzene	*28.33*	1.0	*30*	0	*94.4*	*77-129*	0			
Surr: Trifluorotoluene	*25.83*	1.0	*30*	0	*86.1*	*75-130*	0			

LCSD Sample ID: **BLCSDW1-111205-R120134** Units: **µg/L** Analysis Date: **12/5/2011 10:52 AM**
Client ID: Run ID: **BTEX1_111205A** SeqNo: **2617384** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.45	1.0	20	0	107	77-126	20.94	2.4	20	
Toluene	21.12	1.0	20	0	106	80-124	20.57	2.64	20	
Ethylbenzene	21.34	1.0	20	0	107	76-125	20.75	2.79	20	
Xylenes, Total	65.12	3.0	60	0	109	79-124	63.5	2.52	20	
Surr: 4-Bromofluorobenzene	*28.79*	1.0	*30*	0	*96*	*77-129*	28.33	*1.61*	*20*	
Surr: Trifluorotoluene	*25.94*	1.0	*30*	0	*86.5*	*75-130*	25.83	*0.445*	*20*	

MS Sample ID: **1111900-07AMS** Units: **µg/L** Analysis Date: **12/5/2011 12:05 PM**
Client ID: Run ID: **BTEX1_111205A** SeqNo: **2617387** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.7	1.0	20	0	98.5	77-126	0			
Toluene	19.18	1.0	20	0	95.9	80-124	0			
Ethylbenzene	18.83	1.0	20	0	94.2	76-125	0			
Xylenes, Total	57.7	3.0	60	0	96.2	79-124	0			
Surr: 4-Bromofluorobenzene	*28.73*	1.0	*30*	0	*95.8*	*77-129*	0			
Surr: Trifluorotoluene	*26.36*	1.0	*30*	0	*87.9*	*75-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Work Order: 1111901
Project: Vac to Jal Mainline #5

QC BATCH REPORT

Batch ID: **R120134** Instrument ID **BTEX1** Method: **SW8021B**

MSD Sample ID: **1111900-07AMSD** Units: **µg/L** Analysis Date: **12/5/2011 12:23 PM**

Client ID: Run ID: **BTEX1_111205A** SeqNo: **2617388** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.27	1.0	20	0	106	77-126	19.7	7.67	20	
Toluene	20.73	1.0	20	0	104	80-124	19.18	7.76	20	
Ethylbenzene	20.53	1.0	20	0	103	76-125	18.83	8.6	20	
Xylenes, Total	62.86	3.0	60	0	105	79-124	57.7	8.57	20	
Surr: 4-Bromofluorobenzene	*28.87*	1.0	*30*	0	*96.2*	*77-129*	28.73	*0.504*	*20*	
Surr: Trifluorotoluene	*26.29*	1.0	*30*	0	*87.6*	*75-130*	26.36	*0.253*	*20*	

The following samples were analyzed in this batch: 1111901-11A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: EarthCon Consultants, Inc.
Project: Vac to Jal Mainline #5
WorkOrder: **1111901**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/L	Milligrams per Liter

ALS Environmental

Chain of Custody Form

Page 1 of 1

COC ID: 48549

1111901

PREMIER ENV: EarthCon Consultants, Inc.

Project: Vac to Jal Mainline #5

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Vac to Jal Mainline #5	A	BTEX
Work Order		Project Number	205068	B	
Company Name	Earth Consulting Group, Inc.	Bill To Company	Plains All America, LP	C	
Send Report To	Kathleen Buxton	Invoice Attn		D	
Address	4800 Sugar Grove Blvd. Suite 390	Address	c/o ENV. Accounts Payable P.O. Box 4648	E	
				F	
City/State/Zip	Houston, TX 77477	City/State/Zip	Houston, TX 77210-4648	G	
Phone	(281) 240-5200	Phone	(713) 646-4610	H	
Fax	(281) 240-5201	Fax	(713) 646-4199	I	
e-Mail Address		e-Mail Address		J	

No:	Sample Description	Date	Time	Matrix	Pres	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW1	11-28-11	15:30	G.W.	HCL	3	X										
2	MW2		15:35														
3	MW3		15:40														
4	MW4		15:45														
5	MW5		15:50														
6	MW6		15:55														
7	MW7		16:00														
8	RW4		16:05														
9	RW5		16:10														
10	RW6		16:15														

Sampler(s) Please Print & Sign: Matt Grubbs, Shane Miller

Shipment Method: FEDEX

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☑ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other

Results Due Date:

Relinquished by: Matt Grubbs Date: 11-29-11 Time: 09140 Received by: FEDEX

Relinquished by: Date: Time: Received by (Laboratory): Date: 11-30-11 Time: 1

Logged by (Laboratory): Date: Time: Checked by (Laboratory):

Notes: 5 Day TAT.

Cooler ID: 427 Cooler Temp:

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other / EDD
- ☐ TRRP Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

ALS Environmental

Sample Receipt Checklist

Client Name: **PREMIER ENV** Date/Time Received: **30-Nov-11 09:35**

Work Order: **1111901** Received by: **PMG**

Checklist completed by Raymond N Gamboa (eSignature) 30-Nov-11 (Date) Reviewed by: Hector Coronado (eSignature) 07-Dec-11 (Date)

Matrices: Groundwater, Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	1.7c	002	
Cooler(s)/Kit(s):	4637		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes: Trip blank not on COC--logged in without analysis.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

W6# 111901

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
4637

CUSTODY SEAL

Date: 11-29-11 Time: 09:40
Name: Matt Grubbs
Company: EArthCon

Seal Broken By:
Date: 11.30.11

... This portion can be removed for Recipient's records.

Date	11-29-11
FedEx Tracking Number	898941675055
Sender's Name	Matt Grubbs
Phone	432 230 2131
Company	EarthCon C.S.
Address	30 W. Industrial loop
Dept/Floor/Suite/Room	I
City	Midland
State	Tx
ZIP	79701
Your Internal Billing Reference	7050609