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# Annual GW Mon. REPORTS

DATE:

2009

**2009 ANNUAL REPORT  
VACUUM TO JAL 14" MAINLINE #5  
PLAINS SRS NO.: 2003-00134**

**UL-A SECTION 2 T22S R37E  
Lea County, New Mexico**

**NMOCD # 1R - 0464**

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MAR 31 2010  
Environmental Bureau  
Oil Conservation Division

PREPARED FOR



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**March 2010**

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March 30, 2010

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

Re: 2009 Annual Reports for  
Vacuum to Jal 14" Mainline #3  
Vacuum to Jal 14" Mainline #5  
D S Hugh  
Hugh Gathering

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MAR 31 2010  
11:28

Dear Mr. Hansen:

Please find enclosed one copy each of the 2009 Annual Report required to be submitted to the New Mexico Oil Conservation Division (NMOCD). Annual Reports for the year 2009 were prepared by Premier Environmental Services, Inc. (Premier) on behalf of Plains Pipeline, L.P. (Plains) for the following Plains' sites located in Lea County, New Mexico:

- Vacuum to Jal 14" Mainline #3; NMOCD # 1R - 455; Plains SRS # 2003 - 00117
- Vacuum to Jal 14" Mainline #5; NMOCD # 1R - 0464; Plains SRS # 2003 - 00134
- D S Hugh; NMOCD # 1R - 0463; Plains SRS # 2000 - 10807
- Hugh Gathering; NMOCD # AP-0041; Plains SRS # 2002 - 10235

If you have any questions or concerns, please feel free to call us at (281) 240-5200 extension 2703.

Yours very truly,

Chan Patel  
Senior Project Manager

Steven M Sellepack  
Project Geologist

cc: Larry Johnson (NMOCD Hobbs)  
Mr. Jeffrey Dann, P.G. (Plains)  
Local Plains Representative  
Premier Environmental Services

Attachments

2009 Annual Report - Vacuum to Jal 14" Mainline #3  
2009 Annual Report - Vacuum to Jal 14" Mainline #5  
2009 Annual Report - D S Hugh  
2009 Annual Report - Hugh Gathering

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**DISCLAIMER**

*Premier has examined and relied upon the file information provided by Plains and Environmental Plus, Inc. (EPI). Premier 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. Premier has prepared this report using the level of care and professionalism in the industry for similar projects under similar conditions. Premier 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. Premier believes the conclusions stated herein are factual, but no guarantee is made or implied.*

## EXECUTIVE SUMMARY

Premier Environmental Services, Inc. (Premier) 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, approximately two miles east of Eunice, New Mexico, more specifically at latitude 32° 25' 39.006" N and longitude 103° 07' 43.155" W (**Figure 1, Appendix A**). The hydrocarbon impact at the site is the result of a 20 barrel crude oil release that occurred 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 2009. The objective of the ongoing quarterly groundwater sampling activities at the site is to monitor the concentration of chemicals of concern (COC) in the affected groundwater. Weekly PSH recovery activities are conducted to remove residual crude oil. Groundwater was found to be affected by hydrocarbons, including the presence of PSH, during an initial subsurface investigation conducted at the site by Premier in March 2006. The March 2006 subsurface investigation included the installation of three monitor wells (MW-1, MW-2 and MW-3) and three recovery wells (RW-1, RW-2 and RW-3) to a depth of 60 feet below ground surface (bgs).

A *Soil Remediation Plan*, dated May 2006, was submitted to New Mexico Oil Conservation Division (NMOCD). It was approved by NMOCD in a letter dated June 12, 2006 to Plains. The objective of the *Soil Remediation Plan* was to excavate the highly affected soils and to isolate and control residual concentration of chemicals of concern (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 implemented in October and November 2006. Details of the remediation activities are presented in a report titled *Soil Closure Report*, dated March 2007. 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. Additional site history is presented in **Section 1.0**.

During 2009, groundwater remediation was conducted on a weekly basis through phase separated hydrocarbons (PSH) recovery while groundwater monitoring was completed on a quarterly basis.



Weekly PSH recovery at the site in 2009 led to the recovery of approximately 1,648 gallons of dissolved phase hydrocarbons and 28 gallons of PSH from the three affected recovery wells. The PSH recovery system consists of pumping total fluids using electric pumps, manual recovery using bailers, and passive recovery using absorbent socks. PSH thicknesses were observed to be on a general decreasing trend throughout 2009 as measured in recovery well RW-1, RW-2 and RW-3. The variations in PSH thickness and the trends have been discussed in **Section 2.4** of this report.

Monthly gauging data of the monitor wells indicated a relatively flat groundwater gradient with no significant fluctuations during 2009. The groundwater flow, based on the gauging data collected during 2009, was trending southeast at an approximate average gradient of 0.003 feet/foot across the site based on the groundwater elevations measured between monitor wells MW-4 and MW-7 during the quarterly groundwater sampling events. The groundwater gradient and flow direction across the site during 2009 were similar to the gradient direction observed during the previous four years.

Groundwater monitoring during the first, third and fourth quarters of 2009 was completed by collecting quarterly groundwater samples from wells without PSH and analyzing them for constituents such as benzene, toluene, ethylbenzene and total xylene (BTEX). The analytical results indicated that benzene concentrations, exceeding the NMOCD remediation criteria of 0.01 mg/L, were reported only once in 2009 during the fourth quarter of 2009 sampling event in the groundwater sample collected from monitor well MW-1.

During the second quarter of 2009, groundwater samples from wells with PSH or hydrocarbon sheen (recovery wells RW-1, RW-2 and RW-3) were collected and analyzed for BTEX constituents, Polynuclear aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons (TPH). Only benzene was detected at concentrations that exceed the NMOCD remediation criteria of 0.01 mg/L in the groundwater samples collected from wells with PSH.

Plume stability analysis was completed for the data obtained from the years 2008 and 2009 to establish baseline benzene plume characteristics. Comparison between the 2008 and 2009 plume characteristics indicate that there is a decreasing trend observed. The calculated benzene plume mass for 2009 indicated a 27 percent decrease compared to the plume mass calculated for 2008. However, no assertive trend analysis could be done at this time as only two sampling events including all the wells at the site have been completed to date. Additional sampling events will be necessary to establish trends. Further details and the findings of the

plume stability study are presented in **Section 2.10, Figures 5 through 8, Appendix B.**

The benzene concentrations reported in the groundwater collected from the monitor wells downgradient of the plume, monitor well MW-1, from 2006 to 2009 also indicate a decreasing benzene concentration with an exception of the benzene concentration during the fourth quarter of 2009. This concentration could possibly be an anomaly and additional data is necessary to arrive at any trend. This evaluation is graphically presented in **Figure 9, Appendix B.** Since the wells with PSH at the site are being sampled only since 2008, a plume stability study could not be completed for the years 2006 and 2007.

## 1.0 INTRODUCTION AND SITE HISTORY

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Premier Environmental Services (Premier) was retained by Plains Pipeline, L.P. (Plains) early in 2006 to complete delineation and remediation activities at the Vacuum to Jal #5 site, SRS No.: 2003-00134. The site is located in Lea County, New Mexico, approximately two miles east of Eunice, New Mexico (**Figure 1, Appendix A**). 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, to the NMOCD on May 23, 2003 at about 8:00 pm (a copy of the **C-141 Release Notification Form** is included in **Appendix D**). The leak was apparently caused by internal or external corrosion. The line was being pressure tested when the leak occurred.

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 (**Figure 2, Appendix A**). 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 feet. 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.

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 for the purpose of further delineating depths of contamination and to determine if the base of the excavation was contaminated.

In January 2006, Premier collected twelve composite soil samples from the land farmed soils for the purpose of defining the level of hydrocarbons remaining in these soils. In March 2006, Premier oversaw the installation of six borings and subsequent monitor wells at the site. Following the installation of the six monitor wells, Premier began bi-weekly gauging, 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 *Soil Remediation Plan* was approved by the NMOCD in June 2006. During October and November 2006, Premier 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 on-going groundwater investigation activities conducted at the site, Premier 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 proposed as the remedial approach for this site along with source reduction activities including weekly PSH recovery and quarterly groundwater monitoring.

## **2.0 QUARTERLY GROUNDWATER SAMPLING AND RESULTS**

### **2.1 Site Cleanup Goals (Groundwater)**

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

Benzene	0.010 mg/L
Toluene	0.750 mg/L
Ethylbenzene	0.750 mg/L
Total xylenes	0.620 mg/L
PAHs <sup>1, 2</sup>	0.03 mg/L
Benzo-a-pyrene <sup>2</sup>	0.0007 mg/L

1 – PAHs: Total naphthalenes plus monomethyl naphthalenes

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.

### **2.2 2009 Groundwater Activities**

Groundwater at the site was evaluated throughout 2009 by conducting weekly gauging of recovery wells with PSH or hydrocarbon sheen; monthly gauging of monitor wells; and quarterly groundwater sampling and analysis of seven monitor wells and three recovery wells without PSH or hydrocarbon sheen. Groundwater samples were analyzed for BTEX constituents.

Starting 2008, NMOCD required the groundwater from wells with measurable PSH to be sampled and analyzed for BTEX, total petroleum hydrocarbons and polynuclear aromatic hydrocarbons (PAHs) annually. To meet this requirement, groundwater samples from recovery wells, RW-1, RW-2, and RW-3, were collected during the second quarter of 2009, and analyzed for the above mentioned constituents.

Routine PSH recovery activities were completed weekly either through absorbent socks and/or by removing total fluids from these wells using a submersible pump or a hand bailer. Fluids recovered were initially stored in 55-gallon drums and later placed into a 1000-gallon storage tank.

### **2.3 2009 Groundwater Sampling Activities**

Groundwater samples were collected from wells without PSH or hydrocarbon sheen each quarter and were analyzed for BTEX constituents during 2009. Starting second quarter of 2008, all recovery wells with PSH or sheen were required to be sampled annually and groundwater analyzed for BTEX, PAH and TPH constituents. Groundwater samples were collected from wells with PSH and hydrocarbon sheen and submitted for laboratory analysis during the second quarter of 2009 sampling event.

During each quarterly groundwater sampling event, prior to purging the wells, depth to PSH (if applicable) and water level measurements were collected from each well using an electric oil/water interface probe. The oil/water interface probe was decontaminated between each use to prevent cross contamination.

Prior to collecting samples from each well, approximately three well volumes of water were purged using dedicated poly vinyl chloride (PVC) bailers or a submersible pump. After purging was completed, groundwater samples were collected using new disposable bailers.

All quarterly groundwater samples collected during 2009 were placed in laboratory-provided containers and placed in a cooler with ice and shipped to Trace Analysis, Inc. in Lubbock, Texas for chemical analysis.

All purge water was placed in labeled 55-gallon drums, and subsequently transferred into a 1,000-gallon tank on-site storage tank. Following sections include a brief discussion of PSH thickness trends observed and the analytical results from quarterly groundwater sampling event.

### **2.4 2009 Groundwater Gauging and PSH recovery activities**

Groundwater at the site was evaluated throughout 2009 through weekly gauging of recovery wells with PSH or hydrocarbon sheen; monthly gauging of monitor wells; in addition to quarterly groundwater sampling and analysis of seven monitor wells and three recovery wells without PSH or hydrocarbon sheen.

Routine groundwater gauging and PSH recovery activities were completed as mentioned above. Measurable PSH was observed in recovery wells RW-1, RW-2, and RW-3.

The PSH thickness in recovery well RW-1 decreased to a hydrocarbon sheen in February 2007 and has continued to remain the same throughout 2008 and most of 2009. Measurable PSH was not observed in this recovery well until December 2009 when a thin layer of measurable PSH thickness (maximum of 0.09 ft) was observed.

The PSH thickness in recovery well RW-2 has fluctuated over time with a maximum measurable thickness of 1.7 ft gauged in September 2008. Overall, the PSH thickness measured in recovery well RW-2 indicates a decreasing trend. The average PSH thickness measured during December 2009 was 0.27 ft.

PSH have been observed in recovery well RW-3 since the end of 2008 with an average thickness of 0.12 ft during the month of December 2008. Gauging data indicates that the PSH thickness decreased from December 2008 until October 2009, becoming a non-measurable sheen beginning in April 2009. During the months of November and December 2009, a thin layer of measurable PSH thickness was observed (maximum of 0.13 ft).

During each site visit, wells with PSH were gauged followed by PSH and dissolved phase hydrocarbon removal (see **Table 1, Appendix B**). Periodically, absorbent socks were used in the three recovery wells.

PSH recovery activities conducted on a weekly basis include removing PSH and dissolved phase hydrocarbons by hand bailing, submersible pumps, and the use of absorbent socks in recovery wells RW-1, RW-2 and RW-3. Based on PSH gauging and recovery data summarized in **Table 5, Appendix B**, approximately 1,649 gallons of dissolved phase hydrocarbons and 28 gallons of PSH were recovered from the three recovery wells RW-1, RW-2 and RW-3 during 2009. A summary of PSH and dissolved phase hydrocarbons recovered on a monthly basis during 2009 is presented in **Table 5 of Appendix B**.

A 1000-gallon poly tank was placed at the site for the purpose of holding dissolved phase hydrocarbon and any PSH entrained in the groundwater removed from recovery wells with PSH or hydrocarbon sheen. The tank was placed in a lined and bermed secondary containment area. Fluids collected in this tank were disposed in March and October of 2009. The fluids were transported for recycling and disposal to a permitted disposal well facility by Key Energy Services. The volume of PSH recovered from absorbent socks could not be quantified.

## **2.5 1<sup>st</sup> Quarter 2009 – Groundwater Activities**

Premier conducted the first quarter of 2009 groundwater sampling event at the site on February 17, 2009.

The groundwater samples were collected from monitor wells MW-1 through MW-7 and recovery wells RW-4 through RW-6 and submitted to Trace for laboratory analyses of BTEX constituents by EPA Method 8021B. Groundwater samples were not collected from recovery wells RW-1, RW-2 and RW-3 during the first quarter of

2009 sampling event due to the presence of PSH in these wells (see **Figure 4-A** in **Appendix A**).

Analytical results for the groundwater samples collected at the site on February 17, 2009 reported benzene concentration above the laboratory reporting limits (RLs) only in the groundwater samples collected from monitor well MW-1 and recovery well RW-5. Both these concentrations were an order of magnitude below the NMOCD remediation criteria of 0.01 mg/L. None of the remaining BTEX constituents were reported above the laboratory RLs during this sampling event. The laboratory analytical results for all the four groundwater sampling events are presented in **Table 2, Appendix B**. A copy of the laboratory's analytical data package is included in **Appendix C**.

The depth to water level measurements collected from wells MW-4 and MW-7 at the site during the first quarter 2009 sampling event indicated static water levels at 3313.71 feet to 3312.24 feet, respectively. The water level data collected on February 17, 2009 indicates a relatively flat gradient trending south across the site with an approximate gradient of 0.003 feet/foot (see **Figure 3-A, Appendix A**). This gradient across the site places monitor wells MW-1 and MW-7 down gradient from the source area.

In addition to collecting groundwater samples during the first quarter of 2009, Premier performed weekly visits to the site to gauge and remove PSH from the three recovery wells (RW-1, RW-2 and RW-3). During weekly PSH recovery activities in first quarter of 2009, associated with recovery wells RW-1, RW-2 and RW-3, approximately, 11 gallons of PSH and 553 gallons of groundwater with dissolved phase hydrocarbons were recovered. During the first quarter of 2009, fluids were emptied from the 1,000 gallon tank, recycled and disposed off by Key Energy Services.

## **2.6 2<sup>nd</sup> Quarter – Groundwater Sampling Results – May 2009**

The second quarter of 2009 groundwater sampling activities were conducted on May 19, 2009 and included the collection of groundwater samples from monitor wells MW-1 through MW-7 and recovery wells RW-1 through RW-6.

Analytical results for groundwater samples collected during the May 2009 sampling event from wells without PSH indicated that benzene was reported at concentrations above the laboratory RLs from monitor wells MW-1, and MW-3 and recovery wells RW-5 and RW-6. None of these benzene concentrations reported were above the NMOCD remediation criteria of 0.01 mg/L (**Table 2, Appendix B**). The benzene concentrations reported from monitor well MW-1 and recovery wells RW-5 and RW-6 were at estimated concentrations ("J" flagged) and were below the



NMOCD remediation criteria. The groundwater sample collected from monitor well MW-2 and recovery well RW-5 also reported total xylene concentration above the laboratory RL but below the NMOCD remediation criteria. Groundwater samples collected from all of the remaining wells on site reported the COC concentrations below the laboratory RLs. All remaining constituents in samples from monitor wells MW-1 through MW-7 and recovery wells RW-4 through RW-6 were below the laboratory RLs.

The NMOCD required Plains to collect groundwater samples from wells with PSH or hydrocarbon sheen and analyze these samples for BTEX, PAH and TPH constituents annually. Due to this requirement, groundwater samples were collected from wells RW-1, RW-2 and RW-3, during the second quarter of 2009 and analyzed for BTEX, PAH and TPH constituents. As anticipated, the analytical results revealed the presence of all BTEX constituents above the laboratory RLs and benzene exceeding the NMOCD remediation criteria of 0.01 mg/L in wells RW-1, RW-2 and RW-3 (see **Figure 4-B, Appendix A**). The other BTEX constituents reported were above the laboratory RL but below the NMOCD remediation criteria (see **Table 3, Appendix B**).

Groundwater samples collected from recovery wells RW-1, RW-2 and RW-3 were also analyzed for PAHs and TPH during this quarter. The PAH constituent concentrations of the dissolved phase hydrocarbons in samples from wells with PSH or hydrocarbon sheen was evaluated for screening purposes only. PAH concentrations for compliance should only be evaluated once the PSH is removed and BTEX concentrations in the dissolved phase plume indicate a stable or reducing dissolved phase plume. As part of the evaluation process, PAH constituents detected (associated with crude oil) are compared directly to the New Mexico Water Quality Control Commission (WQCC) groundwater standards for PAHs. The PAHs reported above the laboratory limits such as naphthalene, flourene, phanthrene, dibenzofuran, 1-methylnaphthalene and 2-methylnaphthalene, were all below the New Mexico Water Quality Standards for PAHs (see **Table 4, Appendix B**).

Groundwater was also analyzed for Total petroleum hydrocarbon (TPH) fractions of C<sub>6</sub>-C<sub>10</sub> and C<sub>10</sub>-C<sub>28</sub>, and the reported concentrations are summarized in **Table 4, Appendix B**. There are no standards for TPH in groundwater in New Mexico.

The depth to water level measurements collected from all wells at the site during the May 2009 groundwater sampling event were used to construct the groundwater gradient map included in **Figure 3-B in Appendix A**. The water level data collected on May 19, 2009 indicates the groundwater gradient trending south across the site

with an approximate gradient of 0.003 feet/foot as measured between monitor wells MW-4 and MW-7.

PSH and dissolved phase hydrocarbon recovery activities continued at the site on a weekly basis throughout the second quarter of 2009 (**Table 1, Appendix B**). During weekly PSH recovery activities in second quarter of 2009, associated with recovery wells RW-1, RW-2 and RW-3, approximately, 7 gallons of PSH and 416 gallons of groundwater with dissolved phase hydrocarbons were recovered.

## **2.7 3<sup>rd</sup> Quarter – Groundwater Sampling Results – August 2009**

The third quarter of 2009 groundwater sampling activity was conducted on August 26, 2009 and included the collection of groundwater samples from monitor wells MW-1 through MW-7 and recovery wells RW-4 through RW-6. Analytical results for groundwater samples collected during the August 2009 sampling event reported benzene concentration above the laboratory RL only in the groundwater samples collected from recovery wells RW-5 and RW-6. These concentrations were below the NMOC remediation criteria for benzene of 0.01 mg/L. The groundwater sample collected from recovery well RW-6 was detected at an estimated concentration (J flagged). All remaining constituents in samples from monitor wells and recovery wells were below the laboratory method detection limits.

Due to the presence of PSH in RW-1, RW-2 and RW-3, groundwater samples were not collected from these wells during the third quarter of 2009. **Figure 4-C, Appendix A** presents the COC concentrations at different wells and also the PSH thickness as measured on August 26, 2009.

The depth to water level measurements collected from all wells at the site during the August 2009 sampling event were used to construct the groundwater gradient map included as **Figure 3-C in Appendix A**. The water level data collected on August 26, 2009 indicates a southerly groundwater flow across the site with a relatively flat gradient of approximately 0.003 feet/foot as measured between monitor wells MW-4 and MW-7.

During weekly PSH recovery activities in third quarter of 2009, associated with recovery wells RW-1, RW-2 and RW-3, approximately, 7 gallons of PSH and 223 gallons of groundwater with dissolved phase hydrocarbons were recovered.

## **2.8 4<sup>th</sup> Quarter – Groundwater Sampling Results – November 2009**

The fourth quarter of 2009 groundwater sampling activities were conducted on November 18, 2009 and included the collection of groundwater samples from monitor wells MW-1 through MW-7 and recovery wells RW-4 through RW-6. Analytical results for groundwater samples collected during the November 2009

sampling event reported benzene concentration above the laboratory RLs only from monitor well MW-1 and recovery well RW-5. Benzene concentration reported in the groundwater sample collected from monitor well MW-1 was at a concentration of 0.223 mg/L which is above the NMOCD remediation criteria of 0.01 mg/L (**Table 2, Appendix B**). Benzene concentration reported in the groundwater sample collected from recovery well RW-5 was at an estimated concentration (J flagged). The groundwater sample collected from monitor well MW-1 also reported the presence of ethylbenzene at a concentration above the laboratory RL but below the NMOCD remediation criteria of 0.75 mg/L. All other BTEX constituents in samples from monitor wells MW-2 through MW-7 and recovery wells RW-4 and RW-6 were below the laboratory RL (see **Table 2, Appendix B**). Due to the presence of PSH in RW-1, RW-2 and RW-3, groundwater samples were not collected from these wells during the fourth quarter of 2009 groundwater sampling event (see **Figure 4-D, Appendix A**).

The depth to water level measurements collected from all wells at the site during the November 2009 groundwater sampling event were used to construct the groundwater gradient map included as **Figure 3-D, Appendix A**. The water level data collected on November 18, 2009 indicates a relatively flat groundwater gradient trending south with an approximate gradient of 0.003 feet/foot as measured between monitor wells MW-4 and MW-7.

During weekly PSH recovery activities in fourth quarter of 2009, associated with recovery wells RW-1, RW-2 and RW-3, approximately, 3 gallons of PSH and 457 gallons of groundwater with dissolved phase hydrocarbons were recovered. During the fourth quarter of 2009, fluids were emptied from the 1,000-gallon tank, recycled and disposed off by Key Energy Services.

## 2.9 Benzene Plume Stability Analysis

Understanding plume stability is an important step in the remedial planning process for a site. For instance, an increasing plume could potentially migrate to human or environmental receptors, whereas a stable or decreasing plume may not pose an imminent threat to human health and the environment.

The size of a contaminant plume is influenced by a variety of physical, chemical, and biological processes. Groundwater contaminant plumes are typically limited in size due to a combination of these processes, as well as by other hydrologic and geologic features (streams, clay layers, etc.). When a plume has reached a point of dynamic equilibrium (i.e., steady state), the mass loading to the plume from a source is equal to the rate of the mass lost from the plume by physical, chemical, biological, or in some cases anthropogenic processes. This analysis was

conducted in order to understand the overall stability of the benzene plume in terms of its area, average concentration, mass, and center of mass.

The plume stability analysis completed for the site includes the development of benzene concentration isopleth maps for the years 2008 and 2009. 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 2008 and 2009, the benzene concentrations reported during these two sampling events were used in plume evaluation. 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 have been calculated and are summarized in **Figure 5, Appendix B**. The plume centers of mass for the two years are presented in **Figure 6, Appendix B**. A slight shift in the plume center of mass in the upgradient groundwater flow direction was observed from 2008 to 2009. The two benzene isopleths maps for 2008 and 2009 are presented in **Figures 7 and 8, Appendix B**, respectively.

The current area affected by the benzene plume, in the case of evaluation of groundwater data from wells with PSH, in 2009 quarterly groundwater sampling events is slightly less than that of 2008. The total mass of the benzene plume in 2009 is approximately 0.4 lbs less than the total mass computed in 2008 which is more than a 26 percent reduction during the one year period. **Table 2.1** below provides a summary of plume characteristics.

**Table 2.1 Summary of Plume Stability Characteristics**

Date	Area (Acres)	Average Conc. (µg/l)	Mass (lbs)
2008	0.71	238	1.38
2009	0.69	179	1.01

The analytical data of COCs collected for the site (**Table 2, Appendix B**) indicates that the benzene plume at the site is decreasing in size. The only exception is the benzene concentration reported in the groundwater sample collected from MW-1 during the fourth quarter of 2009 groundwater sampling event. The benzene concentrations reported during the quarterly groundwater sampling events from the downgradient well, monitor well MW-1 was evaluated individually. **Figures 9, Appendix B** present the graphs depicting the benzene concentration over time

along with the NMOCD remediation criteria in monitor well MW-1. The graph indicates a decreasing trend in the benzene concentration with a single exception as noted earlier. The benzene concentration in monitor well MW-1 was below the NMOCD remediation criteria during the first three quarters of 2009.

The plume characteristic data coupled with the analytical and gauging data indicate that the plume is decreasing in size. The plume area average concentration and mass display a decrease from 2008 to 2009. PSH thicknesses appear to be decreasing indicating a decrease in the mass and extent of the source. Comparing the groundwater elevation at the site to the PSH thickness in RW-2, it is observed that groundwater elevation fluctuations could have an impact on the PSH thickness observed. This is displayed graphically on **Figure 10, Appendix B**. Further monitoring will be required to determine if these conditions are persistent and are not a function of some other factor such as groundwater elevation fluctuation.

### 3.0 CONCLUSIONS

---

During 2009, groundwater monitoring was conducted on a quarterly basis and PSH recovery continued weekly through manual bailing, use of electric pumps, and installation of absorbent socks. 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 2009. A summary 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 show that benzene concentrations remained below the NMOCD remediation criteria of 0.01 mg/L throughout 2009 with one exception, the groundwater sample collected from monitor well MW-1 during fourth quarter of 2009.
- Analytical results and PSH gauging data indicate that the down gradient perimeter of dissolved-phase affected groundwater lies to the south of monitor well MW-1 while the up-gradient perimeter lies to the south of monitor well MW-3.
- The reduction in PSH and the decrease in dissolved phase hydrocarbon concentrations are attributable to the source reduction activities conducted at the site such as removal of affected soils in the surface and shallow subsurface soil, placement of a liner, and routine recovery of PSH and dissolved-phase hydrocarbons via use of submersible electric pumps or by manual bailing and natural attenuation.
- A total volume of 26 gallons of PSH and 1,667 gallons of dissolved phase hydrocarbon removed during 2009.
- Plume stability analysis was completed to establish baseline benzene plume characteristics using the 2008 and 2009 benzene data. The initial plume characteristics indicated a decreasing plume area, plume mass and average plume concentration for benzene. However, no assertive trend analysis could be completed at this time as there are only two sampling events that include all the wells at the site. Additional sampling events will be necessary at this time to establish trends.

## 4.0 2010 PROPOSED ACTIVITIES

---

Premier proposes to 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.

Plume stability analysis and data evaluation will be completed for the quarterly data obtained during the 2010 sampling events. A statistical trend analysis will be performed using Mann-Kendall Test on the calculated values to assess the benzene plume stability as more data becomes available. A summary of the plume stability study will also be presented in the 2010 Annual Report.

## DISTRIBUTION

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## **APPENDIX A**

### **Figures**

Figure 1 – Site Location Map

Figure 2 – Site Map

Figure 3-A – Groundwater Gradient Map-1st Quarter, 2009

Figure 3-B – Groundwater Gradient Map-2<sup>nd</sup> Quarter, 2009

Figure 3-C – Groundwater Gradient Map-3<sup>rd</sup> Quarter, 2009

Figure 3-D – Groundwater Gradient Map-4<sup>th</sup> Quarter, 2009

Figure 4-A – 1<sup>st</sup> Quarter 2009 - PSH and Benzene in Groundwater

Figure 4-B(i) – 2<sup>nd</sup> Quarter 2009 - PSH and Benzene in Groundwater

Figure 4-B(ii) – 2<sup>nd</sup> Quarter 2009 – PAH Concentration in Groundwater

Figure 4-C – 3<sup>rd</sup> Quarter 2009 - PSH and Benzene in Groundwater

Figure 4-D – 4<sup>th</sup> Quarter 2009 - PSH and Benzene in Groundwater

Figure 5 – Plume Stability Analysis Summary

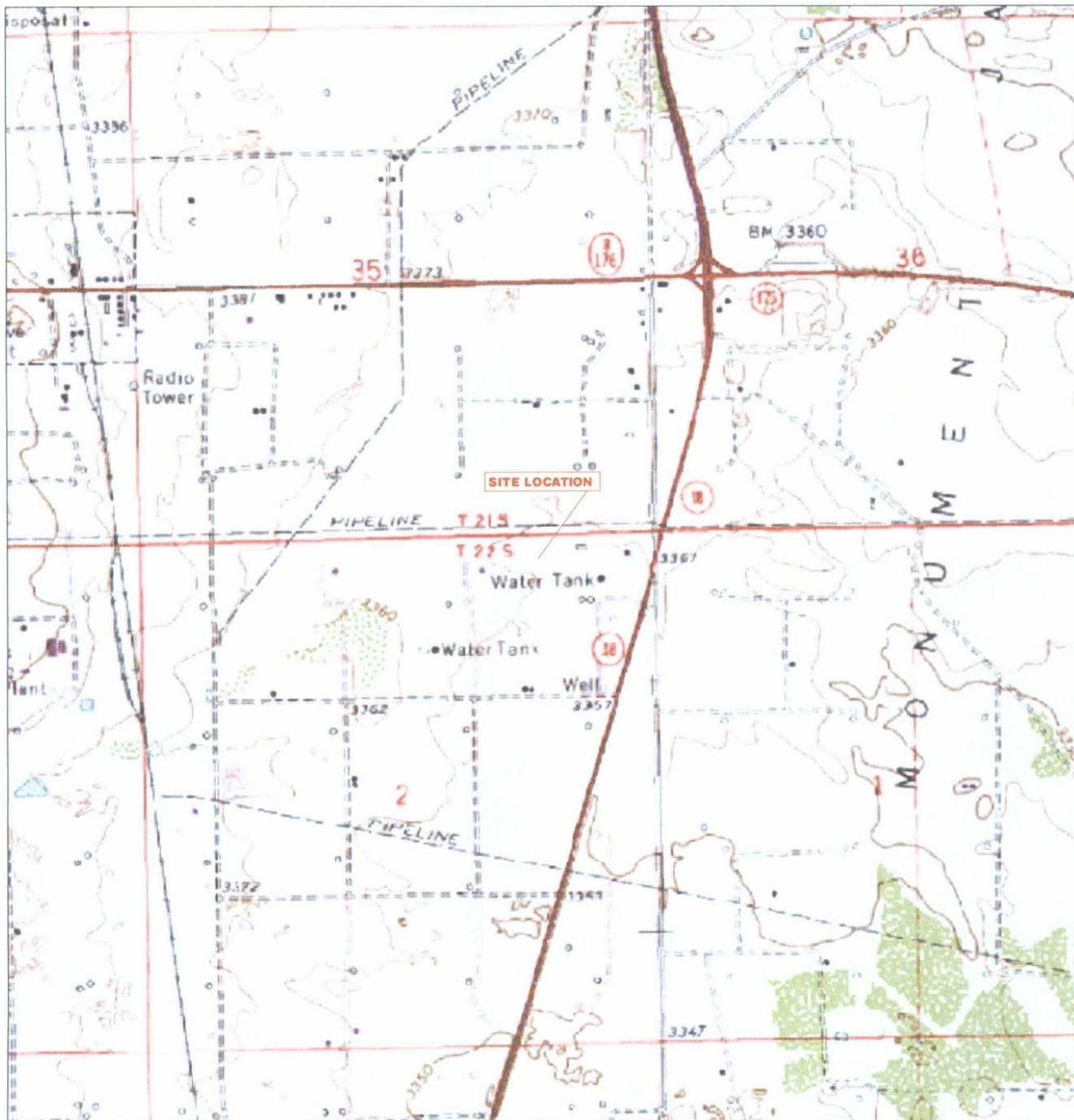
Figure 6 – Benzene Plume Center of Mass Summary

Figure 7 – 2008 Benzene Isopleth Map

Figure 8 – 2009 Benzene Isopleth Map

Figure 9 – Benzene Concentration in Monitor Well MW-1

Figure 10 – Water Elevation and PSH Thickness Data



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

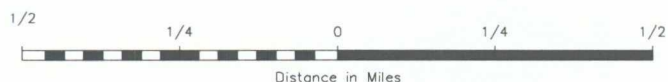
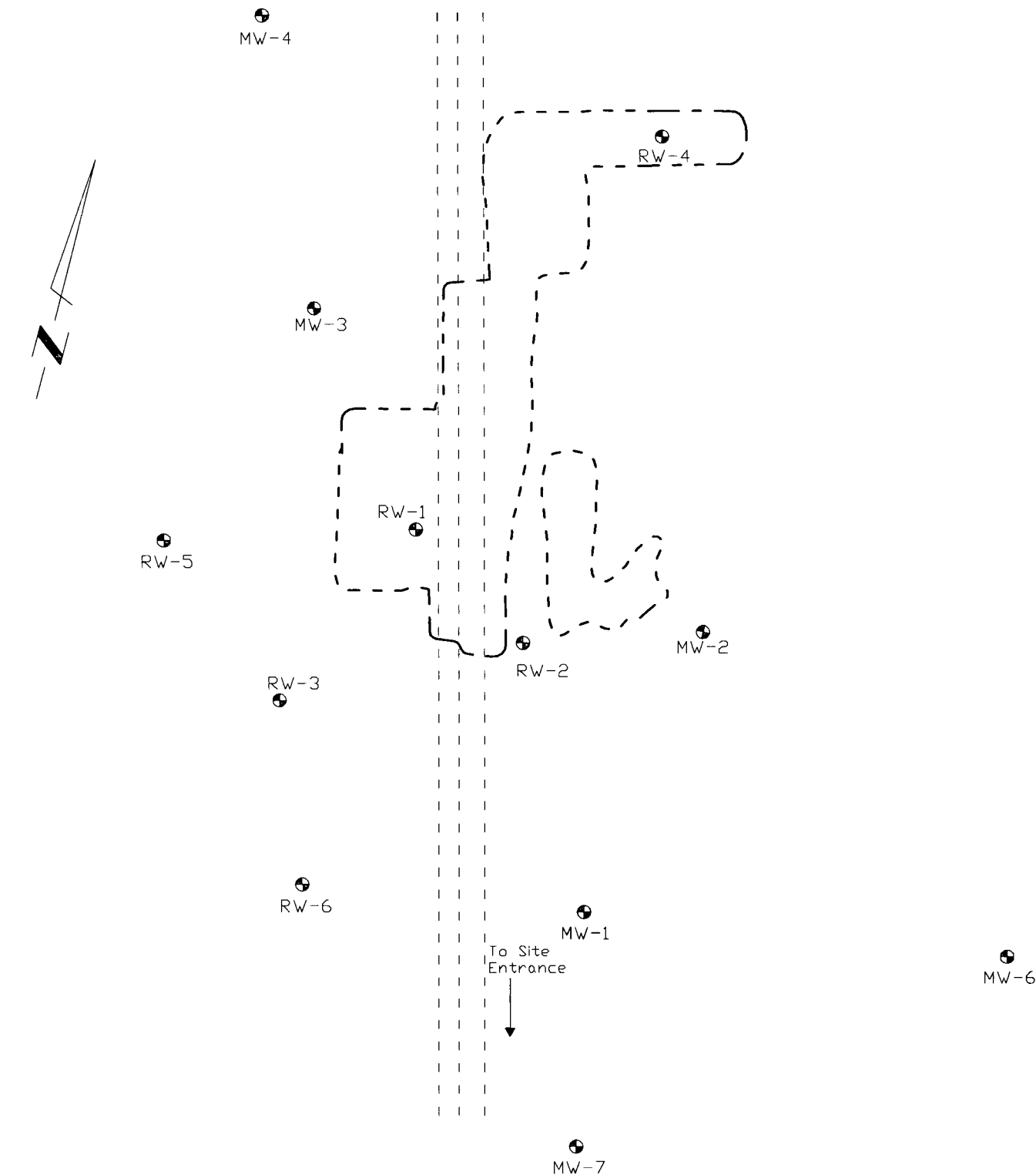


Figure 1  
 Site Location Map  
 Plains Pipeline, L.P.  
 Vacuum to Jal 14" Mainline #5  
 SRS. No.: 2003-00134  
 Lea County, New Mexico

PROJ. NO: 205069.00 CK: DATE: 3/09



**LEGEND:**

- MW - Monitor or Recovery Well Location
- - - Excavation Extent
- ... Buried Pipeline

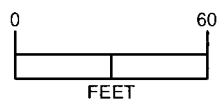


Figure 2  
Site Map  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 CK: DATE: 02/10

MW-4  
(3313.71)

MW-3  
(3313.35)

RW-4  
(3313.51)

3313.50'

3313.25'

RW-5  
(3313.13)

3313.00'

RW-3

RW-2

MW-2  
(3312.89)

3312.75'

RW-6  
(3312.61)

MW-1  
(3312.55)

3312.50'

MW-6  
(3312.25)

To Site  
Entrance

MW-7  
(3312.24)

3312.25'

MW-5  
(3312.23)

#### LEGEND:

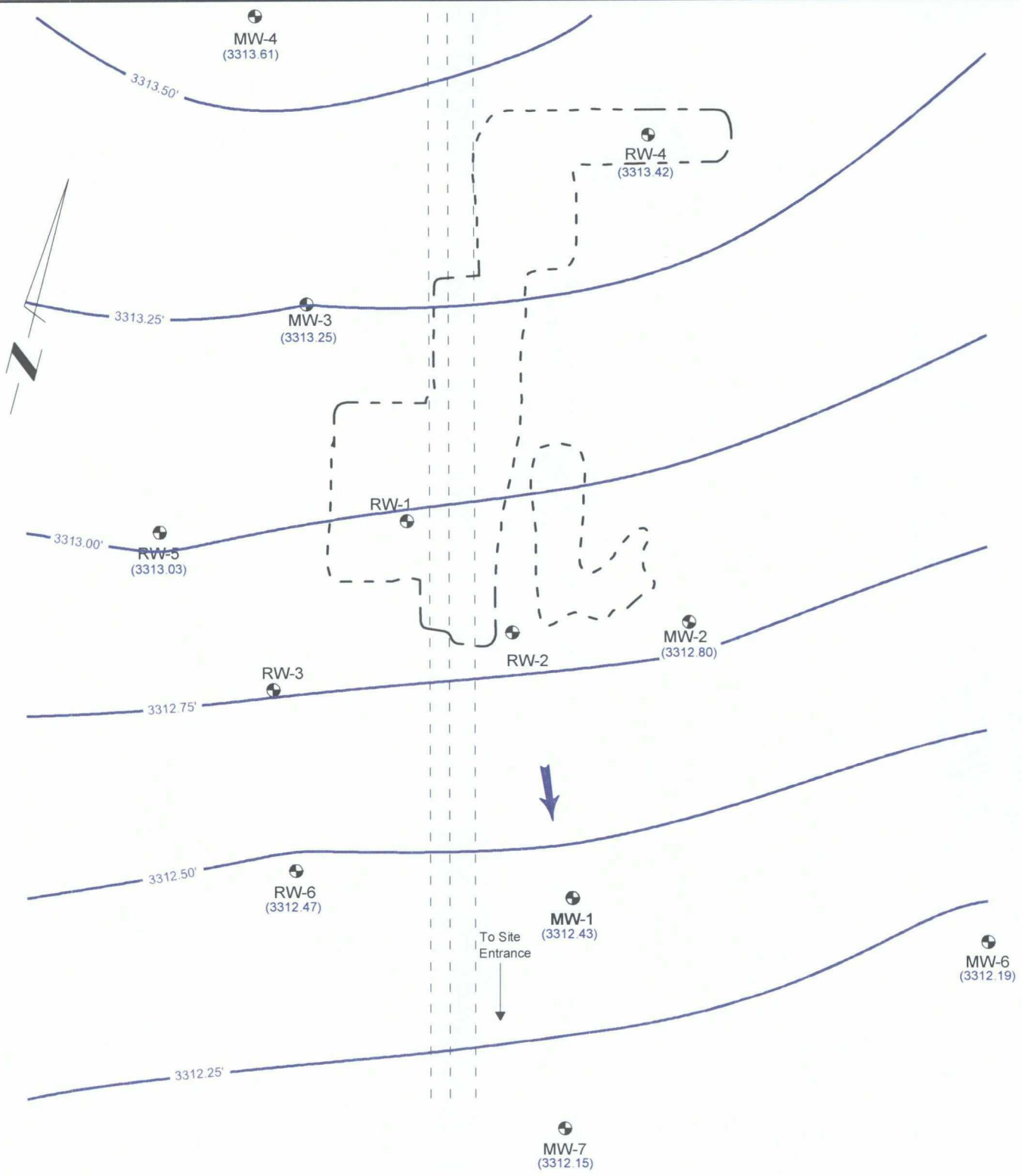
- MW - Monitoring or Recovery Well Location
  - - Excavation Extent
  - - - - Buried Pipeline
  - (3312.23) - Groundwater Elevation in Relative Feet
  - ➔ - Apparent Groundwater Flow Direction
- Note: RW-1, RW-2, and RW-3 not used in contouring  
Contour Interval 0.25 feet



Figure 3A  
1st Quarter 2009 - Groundwater Gradient Map  
February 17, 2009  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 CK: DATE: 02/10

T:\PROJECT FILES\CAD Files\Vacuum to Jal 14 Mainline #5\205069.00-50.00.dwg



**LEGEND:**

- MW - Monitoring or Recovery Well Location
  - - Excavation Extent
  - - Burried Pipeline
  - (3312.23) - Groundwater Elevation in Relative Feet
  - ➡ - Apparent Groundwater Flow Direction
- Note: RW-1, RW-2, and RW-3 not used in contouring  
Contour Interval 0.25 feet



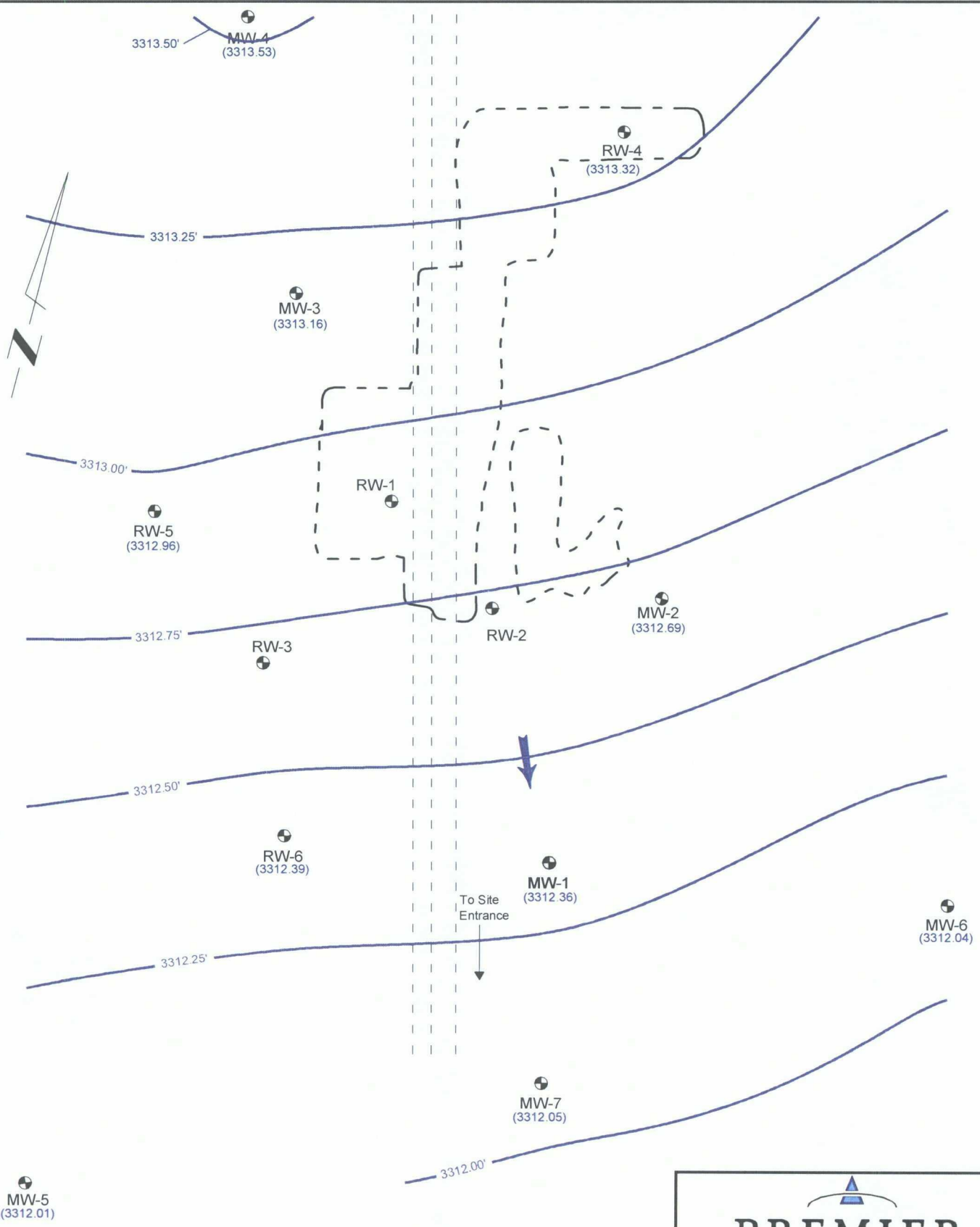
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Figure 3B  
2nd Quarter 2009 - Groundwater Gradient Map  
May 19, 2009  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00	CK:	DATE: 02/10
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T:\PROJECT FILES\CAD Files\Vacuum to Jal 14 Mainline #5\205069.00-51.dwg



**LEGEND:**

- MW - Monitoring or Recovery Well Location
  - - Excavation Extent
  - - Burried Pipeline
  - (3312.23) - Groundwater Elevation in Relative Feet
  - ➡ - Apparent Groundwater Flow Direction
- Note: RW-1, RW-2, and RW-3 not used in contouring  
Contour Interval 0.25 feet



Figure 3C  
3rd Quarter 2009 - Groundwater Gradient Map  
August 26, 2009  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 CK: DATE: 02/10

3313.50' MW-4  
(3313.52)

RW-4  
(3313.30)

MW-3  
(3313.16)

3313.25'

3313.00'

RW-5  
(3312.95)

RW-1

3312.75'

RW-3

RW-2

MW-2  
(3312.69)

3312.50'

RW-6  
(3312.39)

MW-1  
(3312.34)

MW-6  
(3312.06)

3312.25'

To Site  
Entrance

MW-7  
(3312.05)

3312.00'

MW-5  
(3312.00)

#### LEGEND:






-  **MW** - Monitoring or Recovery Well Location
  -  - Excavation Extent
  -  - Burried Pipeline
  -  (3312.23) - Groundwater Elevation in Relative Feet
  -  - Apparent Groundwater Flow Direction
- Note:** RW-1, RW-2, and RW-3 not used in contouring  
Contour Interval 0.25 feet



Figure 3D  
4th Quarter 2009 - Groundwater Gradient Map  
November 18, 2009  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 CK: DATE: 02/10

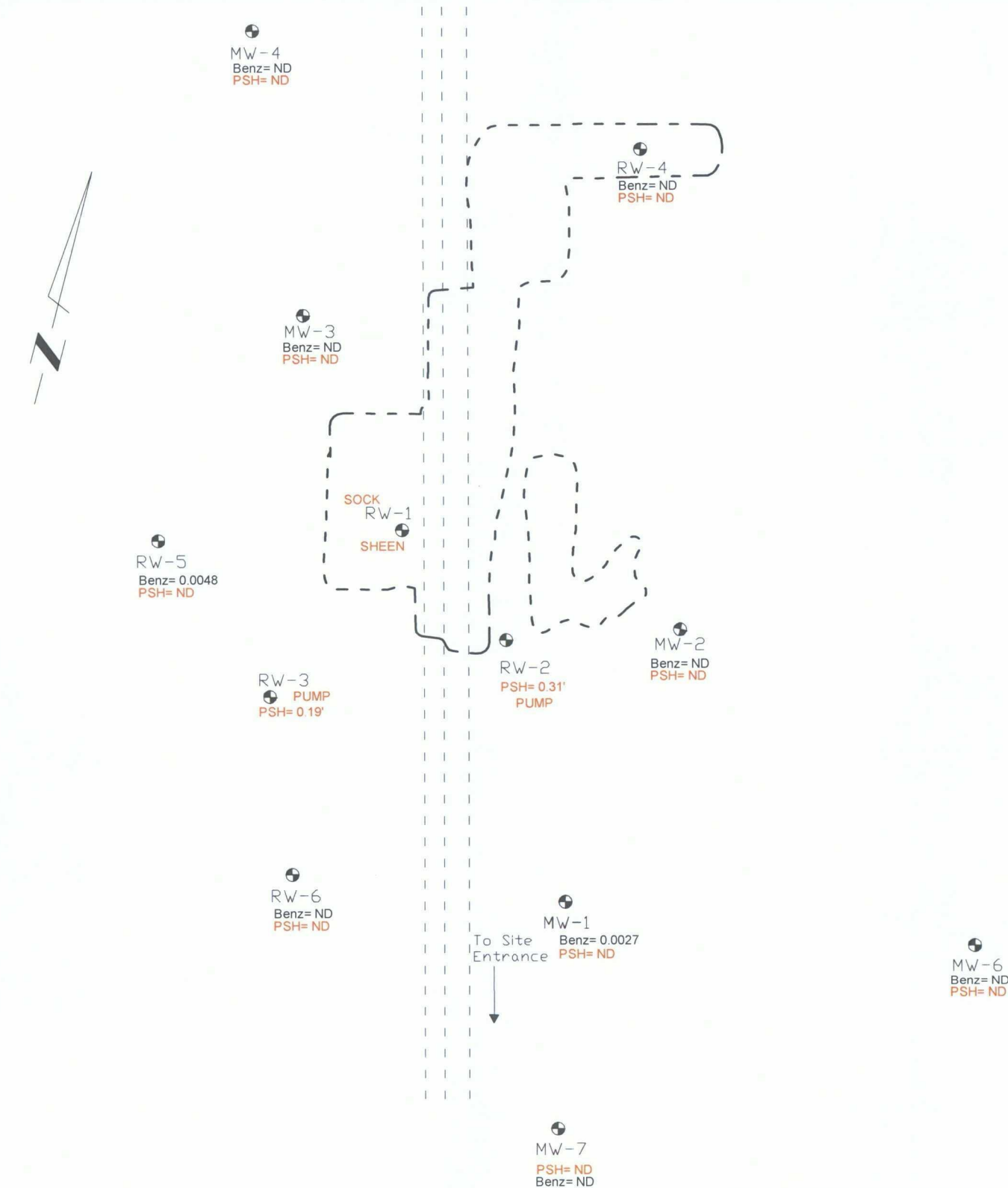
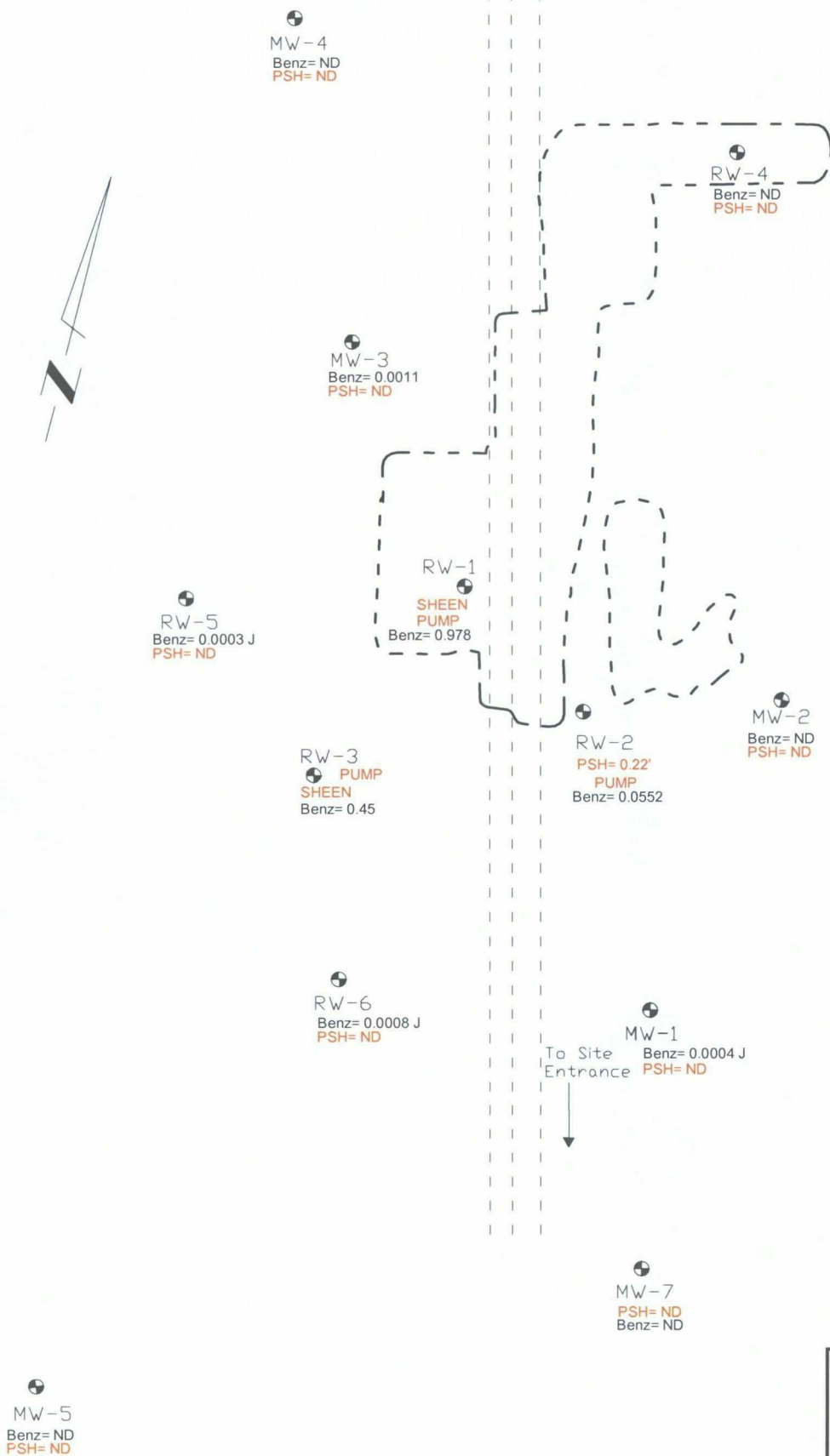


Figure 4A  
1st Quarter 2009- PSH & Benzene in Groundwater  
February 17, 2009  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 CK: DATE: 02/10





**LEGEND:**

● MW - Monitor or Recovery Well Location

--- - Excavation Extent

--- - Buried Pipeline

0.5' - PSH Thickness in feet

Benz = 0.0049 - Benzene Concentrations in mg/L

NMOCD Remediation Criteria for Benzene = 0.01 mg/L



Figure 4B (i)

2nd Quarter 2009- PSH & Benzene in  
Groundwater May 19, 2009

Plains Pipeline, L.P.

Vacuum to Jal 14" Mainline #5

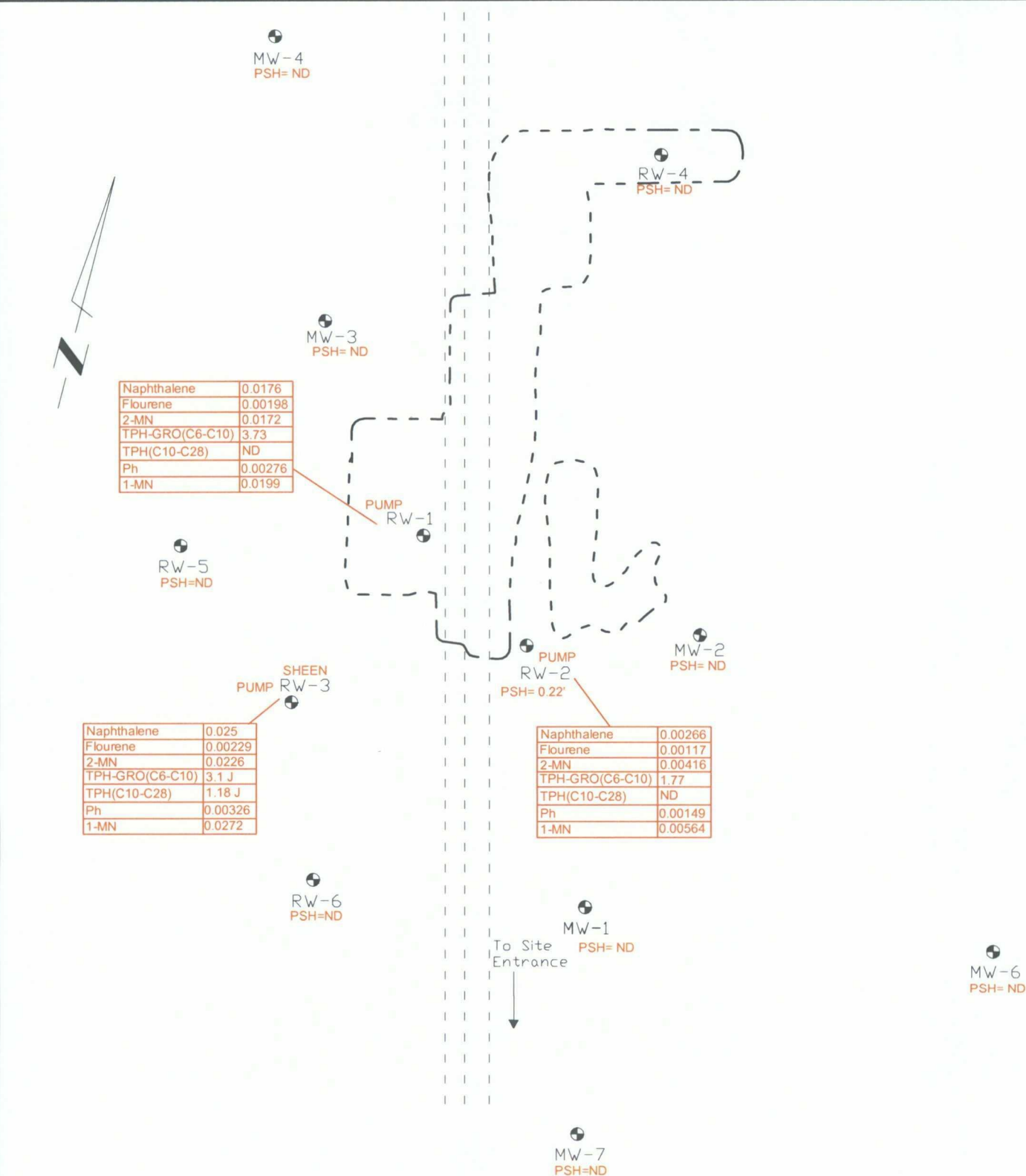
SRS. No.: 2003-00134

Lea County, New Mexico

PROJ. NO: 205069.00

CK:

DATE: 02/10



#### LEGEND:

- MW** - Monitor or Recovery Well Location
- - Excavation Extent
- - - - - Buried Pipeline
- 0.5' - PSH Thickness in feet
- J - Indicates an Estimated Value
- 2-MN - 2-Methylnaphthalene
- 1-MN - 1-Methylnaphthalene
- Ph - Phenanthrene

**Note: Concentrations in mg/L.**



Figure 4B (ii)  
2nd Quarter 2009- PAH Conc. in Groundwater  
May 19, 2009  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 | CK: | DATE: 02/10

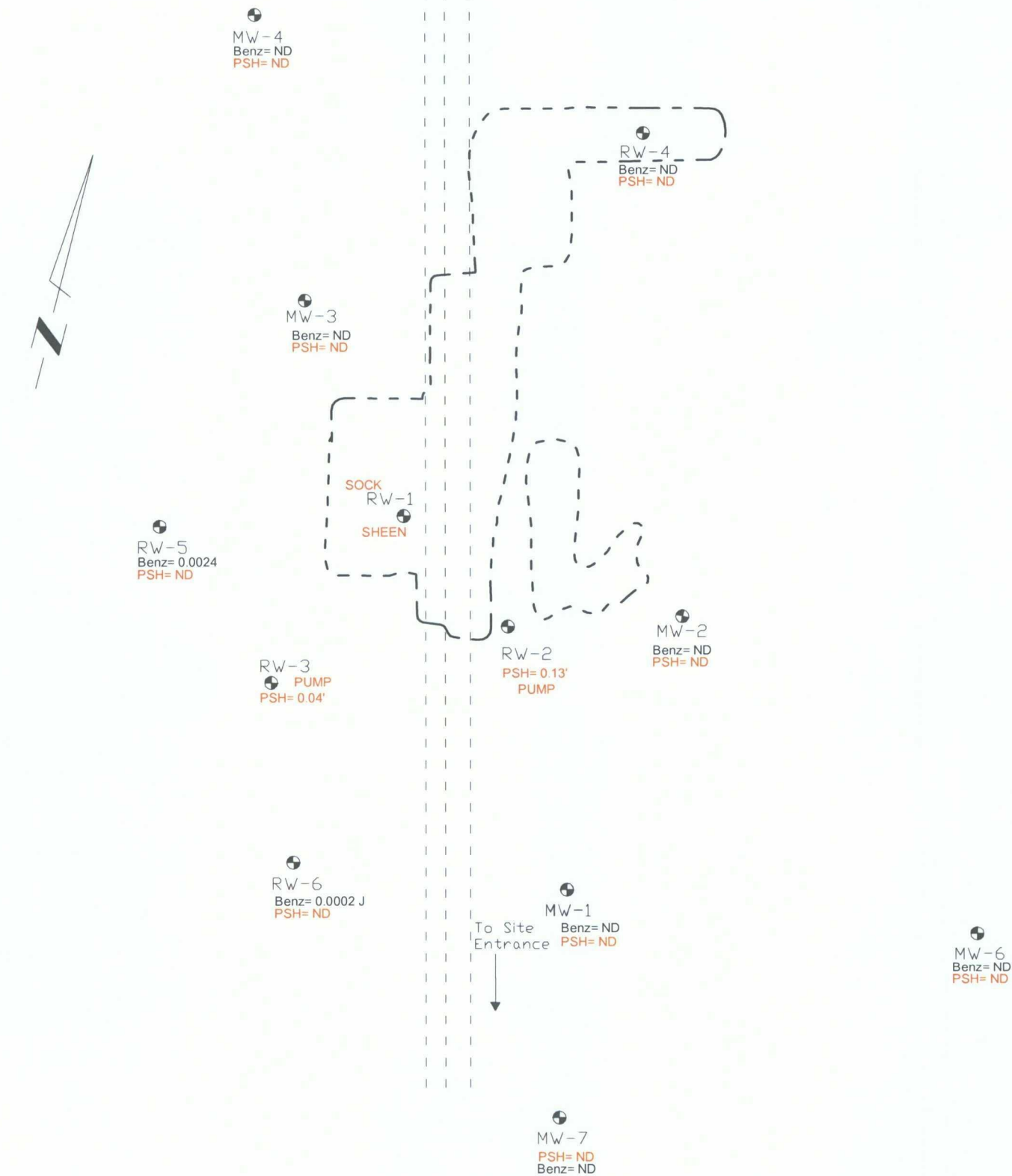


Figure 4C  
3rd Quarter 2009- PSH & Benzene in Groundwater  
August 26, 2009  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 CK: DATE: 02/10

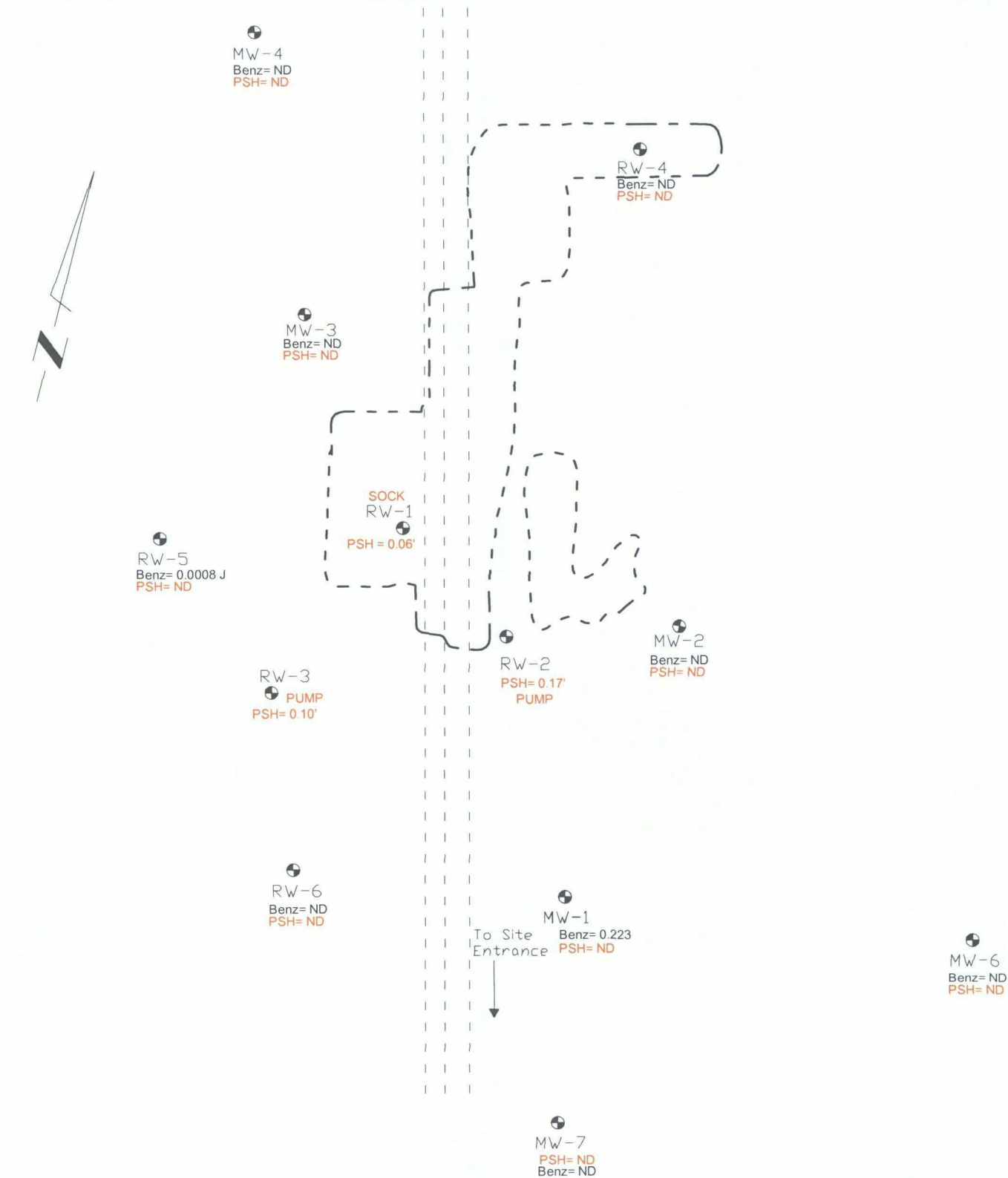
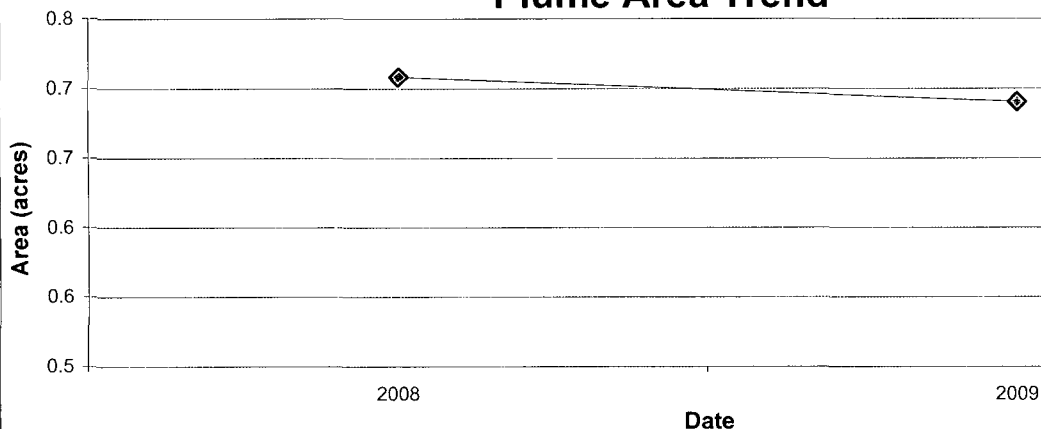


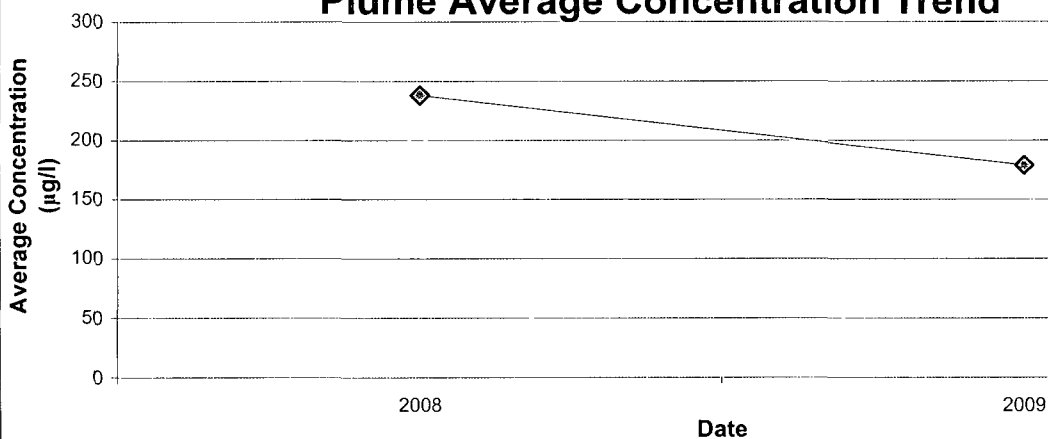
Figure 4D  
4th Quarter 2009- PSH & Benzene in Groundwater  
November 18, 2009  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 | CK: | DATE: 02/10

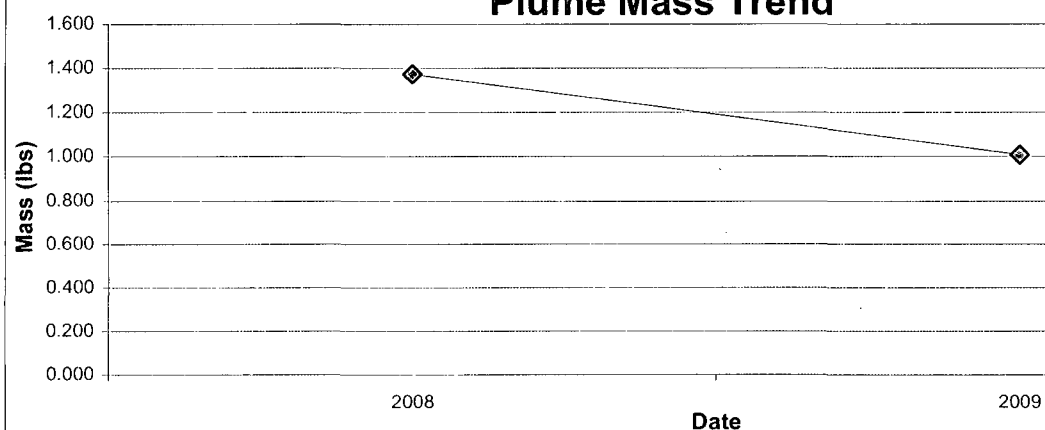
### Plume Area Trend



### Plume Average Concentration Trend



### Plume Mass Trend

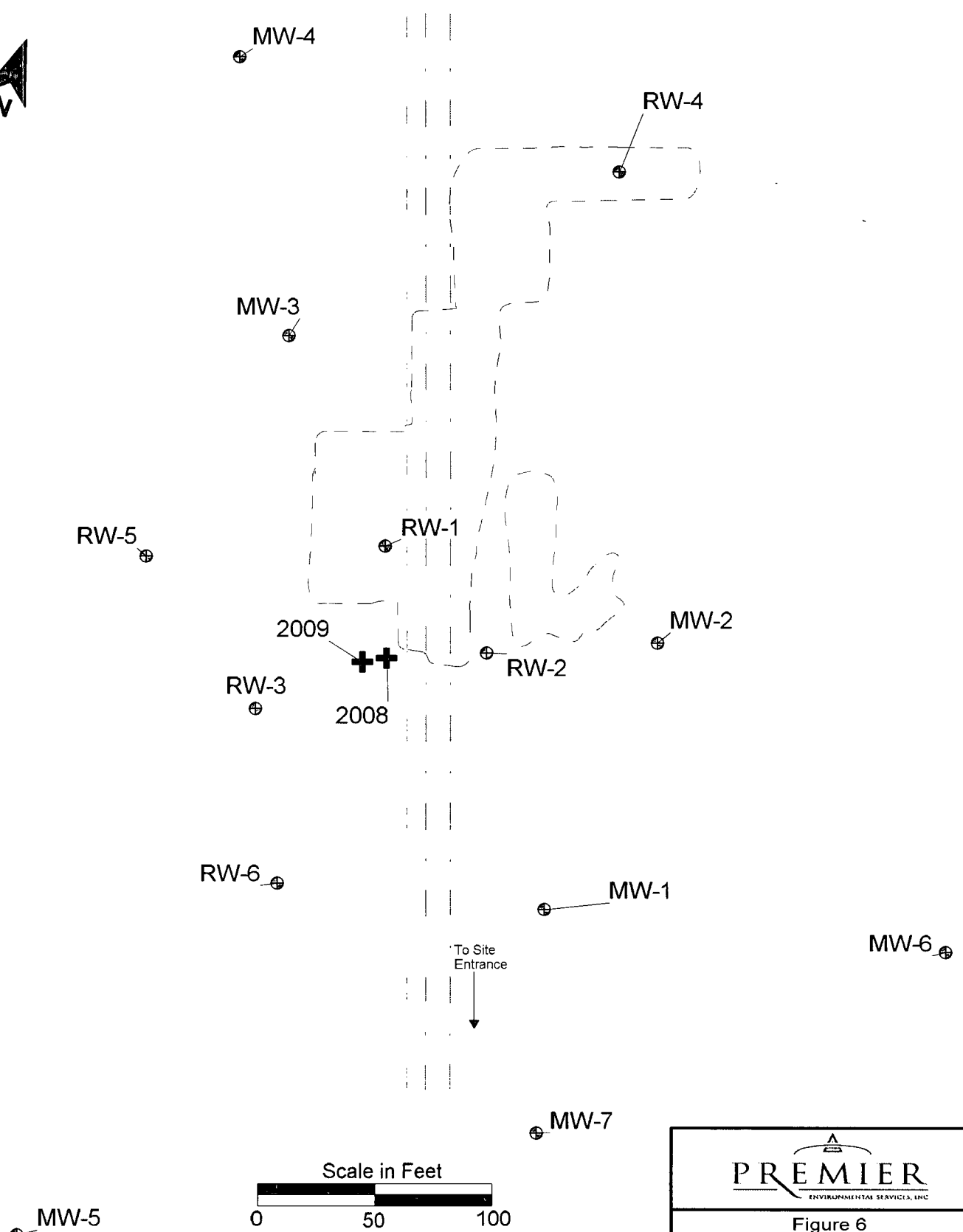


#### Summary of Plume Stability Characteristics

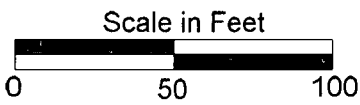
Date	Area (Acres)	Average Conc. (µg/l)	Mass (lbs)
2008	0.71	238.2	1.37
2009	0.69	179.02	1.01




Figure 5  
Benzene Plume Stability Analysis  
Summary 2008 and 2009  
Plains Pipeline, L.P.  
Vacuum to Jal #5  
SRS. No.: 2003-00134  
Lea County, New Mexico



**LEGEND:**  
RW ⊕ RW - Recovery Wells  
MW ⊕ MW - Monitor Wells  
+ Plume Center of Mass





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Figure 6  
Benzene Plume  
Center of Mass Summary  
2008 and 2009  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 | CK: CBP | DATE: 03/10





MW-4  
[1]

RW-4  
[ND]

MW-3  
[2]

RW-5  
[2]

RW-1  
[646]

MW-2  
[1]

RW-3  
[608]

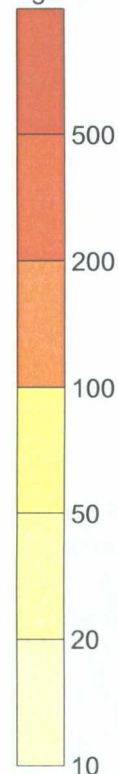
RW-2  
[623]

RW-6  
[ND]

MW-1  
[17]

MW-6  
[ND]

Concentration  
ug/L



**LEGEND:**

RW + RW - Recovery Wells

MW + MW - Monitor Wells

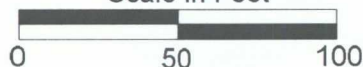
+ Plume Center of Mass

[2] Benzene Concentration in ug/L

MW-5  
[ND]

MW-7  
[1]

Scale in Feet



**Note:**

The benzene concentrations presented on this map represent an average of the concentrations reported in the groundwater samples collected during each quarterly sampling event. The only exceptions are the concentration reported in groundwater sample collected from RW-1, RW-2 and RW-3. These wells were only sampled during the 2nd Quarter 2008.

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Figure 7  
2008 Benzene Isopleth Map  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 CK: CBP DATE: 03/10



MW-4  
[ND]

RW-4  
[ND]

MW-3  
[1]

RW-5  
[2]

RW-1  
[978]

MW-2  
[ND]

RW-3  
[450]

RW-2  
[55]

RW-6  
[1]

MW-1

[75]

MW-6  
[ND]

**LEGEND:**

RW + RW - Recovery Wells

MW + MW - Monitor Wells

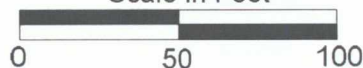
+ Plume Center of Mass

[2] Benzene Concentration in ug/L

MW-5  
[ND]

MW-7  
[ND]

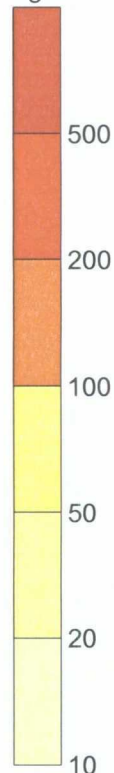
Scale in Feet



**Note:**

The benzene concentrations presented on this map represent an average of the concentrations reported in the groundwater samples collected during each quarterly sampling event. The only exceptions are the concentration reported in groundwater sample collected from RW-1, RW-2 and RW-3. These wells were only sampled during the 2nd Quarter 2009.

Concentration  
ug/L



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Figure 8  
2009 - Benzene Isopleth Map  
Plains Pipeline, L.P.  
Vacuum to Jal 14" Mainline #5  
SRS. No.: 2003-00134  
Lea County, New Mexico

PROJ. NO: 205069.00 CK: CBF DATE: 03/10



Figure 9  
Benzene Concentration Trend in Monitor Well MW-1  
Plains Pipeline, L.P.  
SRS No. 2003--00134  
Vacuum to Jal #5  
Lea County, New Mexico

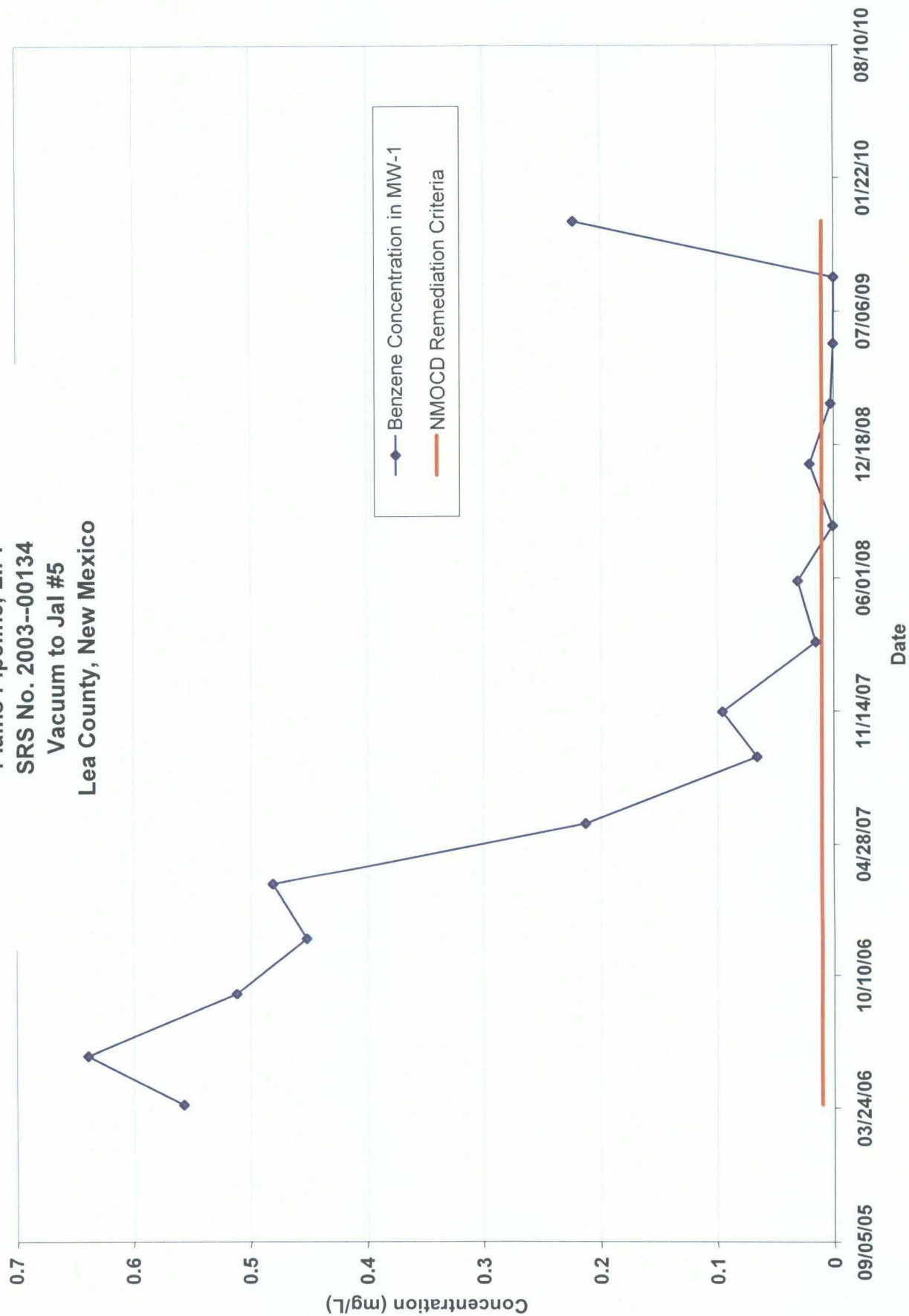
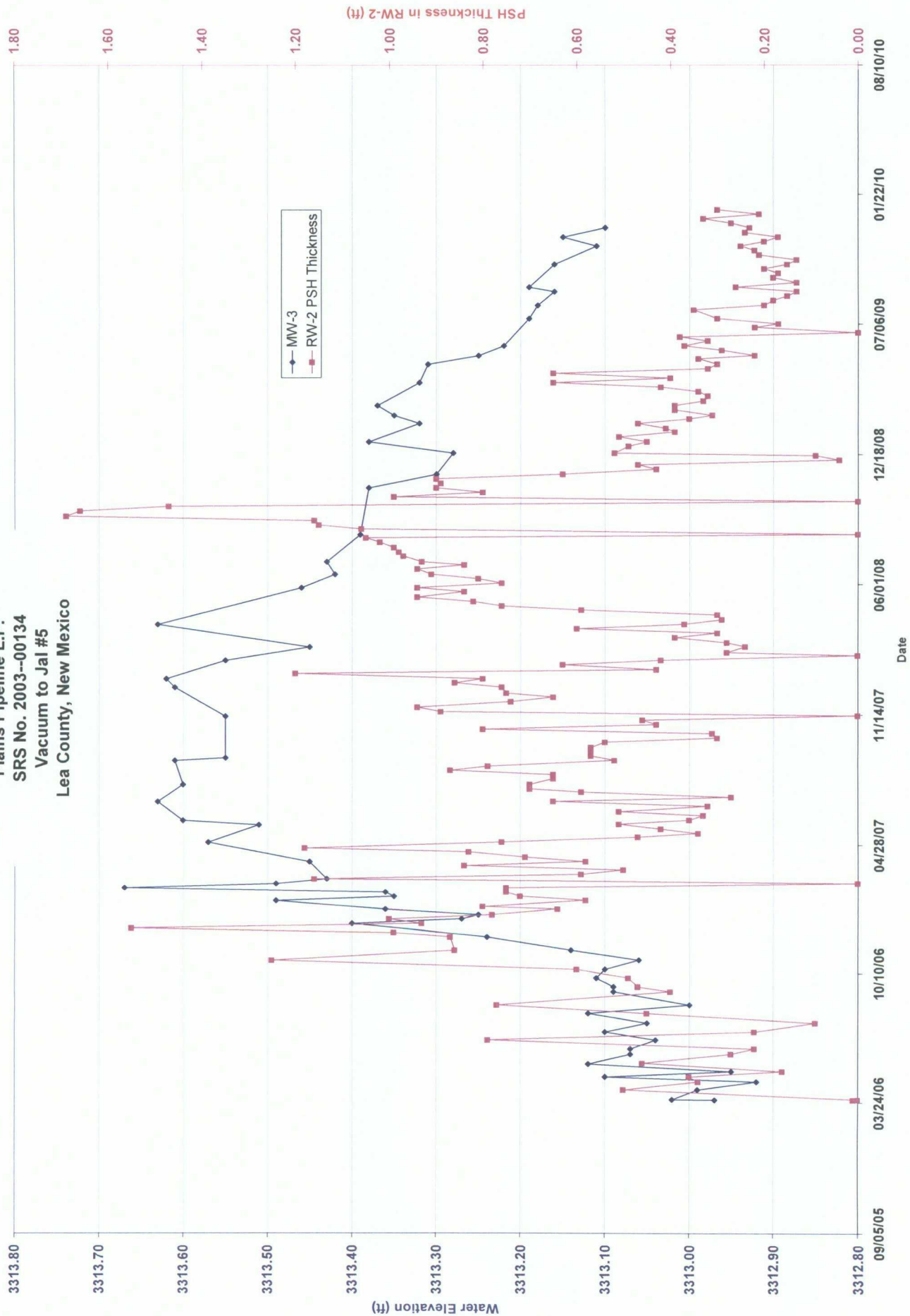


Figure 10  
 Water Elevation and PSH Thickness Data  
 Plains Pipeline L.P.  
 SRS No. 2003-00134  
 Vacuum to Jal #5  
 Lea County, New Mexico



## APPENDIX B

### Tables

Table 1 – 2009 Groundwater Elevation Data

Table 2 – Historical Groundwater Elevation Data

*(Available on CD on attached back cover)*

Table 3 – Groundwater Sample Analytical Results

Table 4 – BTEX Groundwater Sample Analytical Results for Wells with  
PSH/Sheen

Table 5 – Groundwater Analytical Results for Polynuclear Aromatic  
Hydrocarbons (PAHs) from Wells with PSH/Sheen

Table 6 – 2009 Monthly PSH and Dissolved Phase Groundwater Recovery  
Data

**TABLE 1**  
**2009 GROUNDWATER ELEVATION DATA**

Plains Pipeline, L.P.  
SRS # 2003-00134  
Vacuum to Jal #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 (gallons)	Water (gallons)	
MW-1	01/07/09	3363.04	64.15	ND	50.44	ND	NA	NA	NA	3312.60
	02/04/09	3363.04	64.20	ND	50.53	ND	NA	NA	NA	3312.51
	02/17/09	3363.04	64.18	ND	50.49	ND	NA	NA	NA	3312.55
	03/04/09	3363.04	64.20	ND	49.46	ND	NA	NA	NA	3313.58
	04/08/09	3363.04	64.20	ND	50.51	ND	NA	NA	NA	3312.53
	05/06/09	3363.04	64.20	ND	50.56	ND	NA	NA	NA	3312.48
	05/19/09	3363.04	64.20	ND	50.61	ND	NA	NA	NA	3312.43
	06/03/09	3363.04	64.20	ND	50.63	ND	NA	NA	NA	3312.41
	07/15/09	3363.04	64.20	ND	50.64	ND	NA	NA	NA	3312.40
	08/05/09	3363.04	64.20	ND	50.67	ND	NA	NA	NA	3312.37
	08/26/09	3363.04	64.14	ND	50.68	ND	NA	NA	NA	3312.36
	09/02/09	3363.04	64.14	ND	50.68	ND	NA	NA	NA	3312.36
	10/07/09	3363.04	64.14	ND	50.70	ND	NA	NA	NA	3312.34
	11/04/09	3363.04	64.14	ND	50.75	ND	NA	NA	NA	3312.29
MW-2	11/18/09	3363.04	64.14	ND	50.70	ND	NA	NA	NA	3312.34
	12/02/09	3363.04	64.14	ND	50.78	ND	NA	NA	NA	3312.26
	01/07/09	3362.11	64.08	ND	49.17	ND	NA	NA	NA	3312.94
	02/04/09	3362.11	64.10	ND	49.96	ND	NA	NA	NA	3312.15
	02/17/09	3362.11	64.08	ND	49.22	ND	NA	NA	NA	3312.89
	03/04/09	3362.11	64.07	ND	49.20	ND	NA	NA	NA	3312.91
	04/08/09	3362.11	64.07	ND	49.25	ND	NA	NA	NA	3312.86
	05/06/09	3362.11	64.07	ND	50.27	ND	NA	NA	NA	3311.84
	05/19/09	3362.11	64.07	ND	49.31	ND	NA	NA	NA	3312.80
	06/03/09	3362.11	64.07	ND	49.35	ND	NA	NA	NA	3312.76
	07/15/09	3362.11	64.07	ND	49.37	ND	NA	NA	NA	3312.74
	08/05/09	3362.11	64.07	ND	49.39	ND	NA	NA	NA	3312.72
	08/26/09	3362.11	64.05	ND	49.42	ND	NA	NA	NA	3312.69
	09/02/09	3362.11	64.05	ND	49.40	ND	NA	NA	NA	3312.71
MW-3	10/07/09	3362.11	64.05	ND	49.41	ND	NA	NA	NA	3312.70
	11/04/09	3362.11	64.05	ND	49.47	ND	NA	NA	NA	3312.64
	11/17/09	3362.11	64.05	ND	49.42	ND	NA	NA	NA	3312.69
	12/02/09	3362.11	64.05	ND	49.49	ND	NA	NA	NA	3312.62
	01/07/09	3362.13	64.69	ND	48.75	ND	NA	NA	NA	3313.38
	02/04/09	3362.13	64.69	ND	48.81	ND	NA	NA	NA	3313.32
	02/17/09	3362.13	64.69	ND	48.78	ND	NA	NA	NA	3313.35
	03/04/09	3362.13	64.70	ND	48.76	ND	NA	NA	NA	3313.37
	04/08/09	3362.13	64.70	ND	48.81	ND	NA	NA	NA	3313.32
	05/06/09	3362.13	64.70	ND	48.82	ND	NA	NA	NA	3313.31
	05/19/09	3362.13	64.70	ND	48.88	ND	NA	NA	NA	3313.25
	06/03/09	3362.13	64.70	ND	48.91	ND	NA	NA	NA	3313.22
	07/15/09	3362.13	64.70	ND	48.94	ND	NA	NA	NA	3313.19
MW-4	08/05/09	3362.13	64.70	ND	48.95	ND	NA	NA	NA	3313.18
	08/26/09	3362.13	64.68	ND	48.97	ND	NA	NA	NA	3313.16
	09/02/09	3362.13	64.68	ND	48.94	ND	NA	NA	NA	3313.19
	10/07/09	3362.13	64.68	ND	48.97	ND	NA	NA	NA	3313.16
	11/04/09	3362.13	64.68	ND	49.02	ND	NA	NA	NA	3313.11
	11/18/09	3362.13	64.68	ND	48.98	ND	NA	NA	NA	3313.15
	12/02/09	3362.13	64.68	ND	49.03	ND	NA	NA	NA	3313.10
	01/07/09	3362.49	63.41	ND	48.74	ND	NA	NA	NA	3313.75
	02/04/09	3362.49	63.42	ND	48.81	ND	NA	NA	NA	3313.68
	02/17/09	3362.49	63.40	ND	48.78	ND	NA	NA	NA	3313.71
	03/04/09	3362.49	63.41	ND	48.74	ND	NA	NA	NA	3313.75
	04/08/09	3362.49	63.41	ND	48.81	ND	NA	NA	NA	3313.68
	05/06/09	3362.49	63.41	ND	48.81	ND	NA	NA	NA	3313.68
	05/19/09	3362.49	63.41	ND	48.88	ND	NA	NA	NA	3313.61
	06/03/09	3362.49	63.41	ND	48.90	ND	NA	NA	NA	3313.59
	07/15/09	3362.49	63.41	ND	48.94	ND	NA	NA	NA	3313.55
	08/05/09	3362.49	63.41	ND	48.93	ND	NA	NA	NA	3313.56

**TABLE 1**  
**2009 GROUNDWATER ELEVATION DATA**  
 Plains Pipeline, L.P.  
 SRS # 2003--00134  
 Vacuum to Jal #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 (gallons)	Water (gallons)	
MW-4	08/26/09	3362.49	63.40	ND	48.96	ND	NA	NA	NA	3313.53
	09/02/09	3362.49	63.40	ND	48.97	ND	NA	NA	NA	3313.52
	10/07/09	3362.49	63.40	ND	48.95	ND	NA	NA	NA	3313.54
	11/04/09	3362.49	63.40	ND	49.94	ND	NA	NA	NA	3312.55
	11/18/09	3362.49	63.40	ND	48.97	ND	NA	NA	NA	3313.52
	12/02/09	3362.49	63.40	ND	50.03	ND	NA	NA	NA	3312.46
MW-5	01/07/09	3363.67	63.74	ND	51.41	ND	NA	NA	NA	3312.26
	02/04/09	3363.67	63.90	ND	51.49	ND	NA	NA	NA	3312.18
	02/17/09	3363.67	63.78	ND	51.44	ND	NA	NA	NA	3312.23
	03/04/09	3363.67	63.78	ND	51.42	ND	NA	NA	NA	3312.25
	04/08/09	3363.67	63.78	ND	51.46	ND	NA	NA	NA	3312.21
	05/06/09	3363.67	63.78	ND	51.53	ND	NA	NA	NA	3312.14
	05/19/09	3363.67	63.78	ND	51.57	ND	NA	NA	NA	3312.10
	06/03/09	3363.67	63.78	ND	51.59	ND	NA	NA	NA	3312.08
	07/15/09	3363.67	63.78	ND	51.65	ND	NA	NA	NA	3312.02
	08/05/09	3363.67	63.78	ND	51.65	ND	NA	NA	NA	3312.02
	08/26/09	3363.67	63.71	ND	51.66	ND	NA	NA	NA	3312.01
	09/02/09	3363.67	63.71	ND	51.68	ND	NA	NA	NA	3311.99
	10/07/09	3363.67	63.71	ND	51.57	ND	NA	NA	NA	3312.10
	11/04/09	3363.67	63.71	ND	51.73	ND	NA	NA	NA	3311.94
MW-6	01/07/09	3362.6	63.43	ND	50.27	ND	NA	NA	NA	3312.33
	02/04/09	3362.6	63.44	ND	50.36	ND	NA	NA	NA	3312.24
	02/17/09	3362.6	63.44	ND	50.35	ND	NA	NA	NA	3312.25
	03/04/09	3362.6	63.42	ND	50.29	ND	NA	NA	NA	3312.31
	04/08/09	3362.6	63.42	ND	50.34	ND	NA	NA	NA	3312.26
	05/06/09	3362.6	63.42	ND	50.39	ND	NA	NA	NA	3312.21
	05/19/09	3362.6	63.42	ND	50.41	ND	NA	NA	NA	3312.19
	06/03/09	3362.6	63.42	ND	50.45	ND	NA	NA	NA	3312.15
	07/15/09	3362.6	63.42	ND	50.47	ND	NA	NA	NA	3312.13
	08/05/09	3362.6	63.42	ND	50.49	ND	NA	NA	NA	3312.11
	08/26/09	3362.6	63.41	ND	50.56	ND	NA	NA	NA	3312.04
	09/02/09	3362.6	63.41	ND	50.45	ND	NA	NA	NA	3312.15
	10/07/09	3362.6	63.41	ND	50.53	ND	NA	NA	NA	3312.07
	11/04/09	3362.6	63.41	ND	50.57	ND	NA	NA	NA	3312.03
MW-7	01/07/09	3362.75	63.73	ND	50.45	ND	NA	NA	NA	3312.30
	02/04/09	3362.75	63.61	ND	50.53	ND	NA	NA	NA	3312.22
	02/17/09	3362.75	63.60	ND	50.51	ND	NA	NA	NA	3312.24
	03/04/09	3362.75	63.77	ND	50.47	ND	NA	NA	NA	3312.28
	04/08/09	3362.75	63.77	ND	50.52	ND	NA	NA	NA	3312.23
	05/06/09	3362.75	63.77	ND	50.57	ND	NA	NA	NA	3312.18
	05/19/09	3362.75	63.77	ND	50.60	ND	NA	NA	NA	3312.15
	06/03/09	3362.75	63.77	ND	50.65	ND	NA	NA	NA	3312.10
	07/15/09	3362.75	63.77	ND	50.66	ND	NA	NA	NA	3312.09
	08/05/09	3362.75	63.77	ND	50.68	ND	NA	NA	NA	3312.07
	08/26/09	3362.75	63.59	ND	50.70	ND	NA	NA	NA	3312.05
	09/02/09	3362.75	63.59	ND	50.69	ND	NA	NA	NA	3312.06
	10/07/09	3362.75	63.59	ND	50.69	ND	NA	NA	NA	3312.06
	11/04/09	3362.75	63.59	ND	50.75	ND	NA	NA	NA	3312.00
RW-1	01/07/09	3360.67	61.75	50.54	50.54	0.00	Sock	NA	NA	3310.13
	01/15/09	3360.67	61.75	50.58	50.58	0.00	Sock	0	10	3310.09
	01/15/09	3360.67	61.75	51.77	51.77	0.00	Sock	NA	NA	3308.90
	01/22/09	3360.67	61.75	50.59	50.59	0.00	New Sock	0	10	3310.08
	01/22/09	3360.67	61.75	51.37	51.37	0.00	NA	NA	NA	3309.30

**TABLE 1**  
**2009 GROUNDWATER ELEVATION DATA**  
 Plains Pipeline, L.P.  
 SRS # 2003--00134  
 Vacuum to Jal #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 (gallons)	Water (gallons)	
RW-1	01/28/09	3360.67	61.75	50.48	50.48	0.00	Flip sock	0	10	3310.19
	01/28/09	3360.67	61.75	52.33	52.33	0.00	NA	NA	NA	3308.34
	02/04/09	3360.67	61.64	50.62	50.62	0.00	Hand Bail	0	10	3310.05
	02/04/09	3360.67	61.64	52.01	52.01	0.00	NA	NA	NA	3308.66
	02/11/09	3360.67	61.64	50.55	50.55	0.00	Hand Bail	0	20	3310.12
	02/11/09	3360.67	61.64	50.56	50.56	0.00	NA	NA	NA	3310.11
	02/17/09	3360.67	61.64	50.46	50.46	0.00	Pump	0	10	3310.21
	02/17/09	3360.67	61.64	50.44	50.44	0.00	NA	NA	NA	3310.23
	02/25/09	3360.67	61.64	50.54	50.54	0.00	Pump/Flip Sock	0	20	3310.13
	02/25/09	3360.67	61.64	50.49	50.49	0.00	NA	NA	NA	3310.18
	03/04/09	3360.67	61.65	50.54	50.54	0.00	New Sock	0	15	3310.13
	03/04/09	3360.67	61.65	52.27	52.27	0.00	NA	NA	NA	3308.40
	03/11/09	3360.67	61.65	50.63	50.63	0.00	Flip sock	0	10	3310.04
	03/11/09	3360.67	61.65	50.83	50.83	0.00	NA	NA	NA	3309.84
	03/18/09	3360.67	61.65	50.47	50.47	0.00	New Sock	0	10	3310.20
	03/18/09	3360.67	61.65	50.95	50.95	0.00	NA	NA	NA	3309.72
	03/25/09	3360.67	61.65	50.42	50.42	0.00	Flip sock	0	10	3310.25
	03/25/09	3360.67	61.65	51.29	51.29	0.00	NA	NA	NA	3309.38
	04/01/09	3360.67	61.65	50.52	50.52	0.00	New Sock	NA	NA	3310.15
	04/08/09	3360.67	61.65	50.48	50.48	0.00	NA	NA	NA	3310.19
	04/08/09	3360.67	61.65	51.25	51.25	0.00	NA	NA	NA	3309.42
	04/15/09	3360.67	61.65	50.85	50.85	0.00	NA	NA	NA	3309.82
	04/22/09	3360.67	61.65	50.64	50.64	0.00	NA	NA	NA	3310.03
	04/29/09	3360.67	61.65	50.52	50.52	0.00	NA	NA	NA	3310.15
	05/06/09	3360.67	61.65	50.63	50.63	0.00	NA	NA	NA	3310.04
	05/06/09	3360.67	61.65	52.44	52.44	0.00	pump	0	10	3308.23
	05/14/09	3360.67	61.65	50.75	50.75	0.00	NA	NA	NA	3309.92
	05/19/09	3360.67	61.65	50.56	50.56	0.00	pump	0	22	3310.11
	05/27/09	3360.67	61.65	50.57	50.57	0.00	NA	NA	NA	3310.10
	05/27/09	3360.67	61.65	52.35	52.35	0.00	pump	0	10	3308.32
	06/03/09	3360.67	61.65	50.19	50.19	0.00	NA	NA	NA	3310.48
	06/03/09	3360.67	61.65	50.36	50.36	0.00	pump	0	15	3310.31
	06/11/09	3360.67	61.65	50.56	50.56	0.00	NA	NA	NA	3310.11
	06/11/09	3360.67	61.65	52.03	52.03	0.00	pump	0	10	3308.64
	06/17/09	3360.67	61.65	50.68	50.68	0.00	NA	NA	NA	3309.99
	06/23/09	3360.67	61.65	50.75	50.75	0.00	NA	NA	NA	3309.92
	07/01/09	3360.67	61.65	50.37	50.37	0.00	Flip sock	NA	NA	3310.30
	07/07/09	3360.67	61.65	51.00	51.00	0.00	NA	NA	NA	3309.67
	07/15/09	3360.67	61.65	51.00	51.00	0.00	New Sock	NA	NA	3309.67
	07/29/09	3360.67	61.65	50.80	50.80	0.00	NA	NA	NA	3309.87
	08/05/09	3360.67	61.65	50.73	50.73	0.00	Flip sock	NA	NA	3309.94
	08/12/09	3360.67	61.65	50.80	50.80	0.00	NA	NA	NA	3309.87
	08/19/09	3360.67	61.65	50.80	50.80	0.00	New Sock	NA	NA	3309.87
	08/26/09	3360.67	61.65	50.75	50.75	0.00	NA	NA	NA	3309.92
	09/02/09	3360.67	61.65	50.79	50.79	0.00	NA	NA	NA	3309.88
	09/09/09	3360.67	61.65	50.82	50.82	0.00	NA	NA	NA	3309.85
	09/16/09	3360.67	61.65	50.96	50.96	0.00	NA	NA	NA	3309.71
	09/23/09	3360.67	61.65	50.96	50.96	0.00	New Sock	NA	NA	3309.71
	09/30/09	3360.67	61.65	50.77	50.77	0.00	Pump	0	10	3309.90
	09/30/09	3360.67	61.65	54.20	54.20	0.00	NA	NA	NA	3306.47
	10/07/09	3360.67	61.65	50.87	50.87	0.00	NA	NA	NA	3309.80
	10/14/09	3360.67	61.65	50.93	50.93	0.00	NA	NA	NA	3309.74
	10/21/09	3360.67	61.65	50.75	50.75	0.00	NA	NA	NA	3309.92
	10/28/09	3360.67	61.65	50.32	50.32	0.00	pump	0	20	3310.35
	10/28/09	3360.67	61.65	50.35	50.35	0.00	NA	NA	NA	3310.32
	11/04/09	3360.67	61.65	50.75	50.79	0.04	pump	0	10	3309.91
	11/04/09	3360.67	61.65	51.97	51.97	0.00	NA	NA	NA	3308.70
	11/11/09	3360.67	61.65	50.75	50.81	0.06	pump	0.25	9.75	3309.91
	11/11/09	3360.67	61.65	52.19	52.19	0.00	NA	NA	NA	3308.48

**TABLE 1**  
**2009 GROUNDWATER ELEVATION DATA**

Plains Pipeline, L.P.  
SRS # 2003--00134  
Vacuum to Jal #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 (gallons)	Water (gallons)	
RW-1	11/18/09	3360.67	61.65	50.69	50.75	0.06	pump	sheen	20	3309.97
	11/18/09	3360.67	61.65	51.95	51.95	0.00	NA	NA	NA	3308.72
	11/25/09	3360.67	61.65	50.76	50.83	0.07	pump	sheen	10	3309.90
	11/25/09	3360.67	61.65	51.75	51.75	0.00	NA	NA	NA	3308.92
	12/02/09	3360.67	61.65	50.74	50.80	0.06	pump	sheen	10	3309.92
	12/02/09	3360.67	61.65	53.15	53.15	0.00	NA	NA	NA	3307.52
	12/09/09	3360.67	61.65	50.76	50.82	0.06	pump	sheen	10	3309.90
	12/09/09	3360.67	61.65	51.85	51.85	0.00	NA	NA	NA	3308.82
	12/16/09	3360.67	61.65	50.79	50.85	0.06	pump	0.25	9.75	3309.87
	12/16/09	3360.67	61.65	51.42	51.42	0.00	NA	NA	NA	3309.25
	12/23/09	3360.67	61.65	50.68	50.75	0.07	pump	sheen	10	3309.98
	12/23/09	3360.67	61.65	52.46	52.46	0.00	NA	NA	NA	3308.21
	12/30/09	3360.67	61.65	50.71	50.80	0.09	pump	sheen	10	3309.95
	12/30/09	3360.67	61.65	51.80	51.80	0.00	NA	NA	NA	3308.87
RW-2	01/07/09	3362	63.07	49.35	49.80	0.45	Hand bail	1	9	3312.58
	01/07/09	3362	63.07	49.41	49.42	0.01	NA	NA	NA	3312.59
	01/15/09	3362	63.07	49.39	49.90	0.51	Pump	0.5	9.5	3312.53
	01/15/09	3362	63.07	49.54	49.54	0.00	NA	NA	NA	3312.46
	01/22/09	3362	63.07	49.34	49.73	0.39	Hand bail/No Sock	0.5	9.5	3312.60
	01/28/09	3362	63.07	49.34	49.75	0.41	Hand bail/No Sock	0.25	9.75	3312.60
	01/28/09	3362	63.07	49.41	49.45	0.04	NA	NA	NA	3312.58
	02/04/09	3362	61.10	49.40	49.87	0.47	Pump	0.5	16.5	3312.53
	02/04/09	3362	61.10	49.56	49.56	0.00	NA	NA	NA	3312.44
	02/11/09	3362	61.10	49.41	49.77	0.36	Pump	0.5	24.5	3312.54
	02/11/09	3362	61.10	49.49	49.49	0.00	NA	NA	NA	3312.51
	02/17/09	3362	61.10	49.36	49.67	0.31	Pump	1	39	3312.59
	02/17/09	3362	61.10	49.40	49.40	0.00	NA	NA	NA	3312.60
	02/25/09	3362	61.10	49.37	49.76	0.39	Pump	0.25	19.75	3312.57
	02/25/09	3362	61.10	49.56	49.56	0.00	NA	NA	NA	3312.44
	03/04/09	3362	61.10	49.31	49.70	0.39	Pump	0.5	19.5	3312.63
	03/04/09	3362	61.10	49.32	49.32	0.00	NA	NA	NA	3312.68
	03/11/09	3362	61.10	49.46	49.79	0.33	Pump	0.5	19.5	3312.49
	03/11/09	3362	61.10	49.48	49.48	0.00	NA	NA	NA	3312.52
	03/18/09	3362	61.10	49.35	49.67	0.32	Pump	0.25	14.75	3312.60
	03/18/09	3362	61.10	49.41	49.41	0.00	NA	NA	NA	3312.59
	03/25/09	3362	61.10	49.31	49.65	0.34	Pump	0.1	19.9	3312.64
	03/25/09	3362	61.10	49.69	49.69	0.00	NA	NA	NA	3312.31
	04/01/09	3362	61.10	49.32	49.74	0.42	NA	NA	NA	3312.62
	04/08/09	3362	61.10	49.33	49.98	0.65	Pump	0.5	19.5	3312.57
	04/08/09	3362	61.10	49.49	49.49	0.00	NA	NA	NA	3312.51
	04/15/09	3362	61.10	49.35	49.75	0.40	Pump	0.25	14.75	3312.59
	04/15/09	3362	61.10	50.24	50.24	0.00	NA	NA	NA	3311.76
	04/22/09	3362	61.10	49.30	49.95	0.65	NA	NA	NA	3312.60
	04/29/09	3362	61.10	49.40	49.72	0.32	Pump	0.5	19.5	3312.55
	04/29/09	3362	61.10	49.69	49.69	0.00	NA	NA	NA	3312.31
	05/06/09	3362	61.10	49.44	49.74	0.30	Pump	1.5	18.5	3312.52
	05/06/09	3362	61.10	49.50	49.50	0.00	NA	NA	NA	3312.50
	05/14/09	3362	61.10	49.41	49.75	0.34	NA	NA	NA	3312.54
	05/14/09	3362	61.10	49.99	49.99	0.00	Pump	0.5	19.5	3312.01
	05/19/09	3362	61.10	49.48	49.70	0.22	Pump	0.5	30	3312.49
	05/27/09	3362	61.10	49.43	49.72	0.29	NA	NA	NA	3312.53
	05/27/09	3362	61.10	50.01	50.01	0.00	Pump	0.5	19.5	3311.99
	06/03/09	3362	61.10	49.49	49.86	0.37	NA	NA	NA	3312.45
	06/03/09	3362	61.10	49.64	49.64	0.00	Pump	0.5	19.5	3312.36
	06/11/09	3362	61.10	49.50	49.82	0.32	NA	NA	NA	3312.45
	06/11/09	3362	61.10	49.71	49.71	0.00	Pump	0.5	19.5	3312.29
	06/17/09	3362	61.10	49.45	49.83	0.38	NA	NA	NA	3312.49
	06/17/09	3362	61.10	50.60	50.60	0.00	Pump	1	19	3311.40
	06/23/09	3362	61.10	50.32	50.32	0.00	NA	NA	NA	3311.68
	06/23/09	3362	61.10	50.31	50.31	0.00	Pump	0.25	9.75	3311.69

**TABLE 1**  
**2009 GROUNDWATER ELEVATION DATA**

Plains Pipeline, L.P.  
SRS # 2003--00134  
Vacuum to Jal #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 (gallons)	Water (gallons)	
RW-2	07/01/09	3362	61.10	49.48	49.70	0.22	NA	NA	NA	3312.49
	07/01/09	3362	61.10	50.41	50.41	0.00	Pump	0.25	14.75	3311.59
	07/07/09	3362	61.10	49.50	49.67	0.17	Pump	0.25	14.75	3312.47
	07/07/09	3362	61.10	50.78	50.78	0.00	NA	NA	NA	3311.22
	07/15/09	3362	61.10	49.53	49.83	0.30	Pump	1	NA	3312.43
	07/15/09	3362	61.10	50.52	50.52	0.00	NA	NA	NA	3311.48
	07/29/09	3362	61.10	49.50	49.85	0.35	Pump	1	14.75	3312.45
	07/29/09	3362	61.10	49.62	49.62	0.00	NA	NA	NA	3312.38
	08/05/09	3362	61.10	49.57	49.77	0.20	Pump	0.25	14.75	3312.40
	08/05/09	3362	61.10	51.25	51.25	0.00	NA	NA	NA	3310.75
	08/12/09	3362	61.10	49.52	49.70	0.18	Pump	0.25	14.75	3312.45
	08/12/09	3362	61.10	50.65	50.65	0.00	NA	NA	NA	3311.35
	08/19/09	3362	61.10	49.50	49.65	0.15	Pump	0.25	14.75	3312.48
	08/19/09	3362	61.10	51.15	51.15	0.00	NA	NA	NA	3310.85
	08/26/09	3362	61.10	49.61	49.74	0.13	NA	NA	NA	3312.37
	09/02/09	3362	61.10	49.51	49.77	0.26	Pump	0.25	14.75	3312.45
	09/02/09	3362	61.10	51.87	51.87	0.00	NA	NA	NA	3310.13
	09/09/09	3362	61.10	49.55	49.68	0.13	Pump	0.25	14.75	3312.43
	09/09/09	3362	61.10	50.22	50.22	0.00	NA	NA	NA	3311.78
	09/16/09	3362	61.10	49.63	49.81	0.18	Pump	0.25	14.75	3312.34
	09/16/09	3362	61.10	51.00	51.00	0.00	NA	NA	NA	3311.00
	09/23/09	3362	61.10	49.58	49.75	0.17	Pump	0.25	19.75	3312.39
	09/23/09	3362	61.10	50.98	50.98	0.00	NA	NA	NA	3311.02
	09/30/09	3362	61.10	49.59	49.79	0.20	Pump	0.25	9.75	3312.38
	09/30/09	3362	61.10	50.93	50.93	0.00	AM	NA	NA	3311.07
	09/30/09	3362	61.10	49.55	49.57	0.02	Pump	NA	10	3312.45
	09/30/09	3362	61.10	50.82	50.82	0.00	PM	NA	NA	3311.18
	10/07/09	3362	61.10	49.63	49.78	0.15	Pump	0.25	9.75	3312.35
	10/07/09	3362	61.10	50.35	50.35	0.00	AM	NA	NA	3311.65
	10/07/09	3362	61.10	49.60	49.62	0.02	Pump	sheen	10	3312.40
	10/07/09	3362	61.10	50.43	50.43	0.00	PM	NA	NA	3311.57
	10/14/09	3362	61.10	49.64	49.77	0.13	Pump	0.5	9.5	3312.34
	10/14/09	3362	61.10	50.24	50.24	0.00	PM	NA	NA	3311.76
	10/14/09	3362	61.10	49.58	49.62	0.04	Pump	sheen	10	3312.41
	10/14/09	3362	61.10	50.23	50.23	0.00	PM	NA	NA	3311.77
	10/21/09	3362	61.10	49.56	49.77	0.21	hand bail	0.5	9.5	3312.41
	10/21/09	3362	61.10	49.75	49.75	0.00	NA	NA	NA	3312.25
	10/28/09	3362	61.10	49.52	49.74	0.22	pump	0.25	19.75	3312.45
	10/28/09	3362	61.10	50.21	50.21	0.00	NA	NA	NA	3311.79
	11/04/09	3362	61.10	49.67	49.92	0.25	AM	0.25	9.75	3312.29
	11/04/09	3362	61.10	50.16	50.16	0.00	NA	NA	NA	3311.84
	11/04/09	3362	61.10	49.66	49.68	0.02	PM	NA	10	3312.34
	11/04/09	3362	61.10	50.03	50.03	0.00	NA	NA	NA	3311.97
	11/11/09	3362	61.10	49.68	49.88	0.20	AM	0.5	9.5	3312.29
	11/11/09	3362	61.10	50.23	50.23	0.00	NA	NA	NA	3311.77
	11/11/09	3362	61.10	49.63	49.64	0.01	PM	sheen	10	3312.37
	11/11/09	3362	61.10	50.53	50.53	0.00	NA	NA	NA	3311.47
	11/18/09	3362	61.10	49.61	49.78	0.17	NA	sheen	20	3312.36
	11/18/09	3362	61.10	50.51	50.51	0.00	NA	NA	NA	3311.49
	11/25/09	3362	61.10	49.68	49.92	0.24	NA	sheen	10	3312.28
	11/25/09	3362	61.10	50.37	50.37	0.00	NA	NA	NA	3311.63
	12/02/09	3362	61.10	49.64	49.87	0.23	NA	sheen	10	3312.33
	12/02/09	3362	61.10	50.29	50.29	0.00	NA	NA	NA	3311.71
	12/09/09	3362	61.10	49.65	49.92	0.27	NA	sheen	10	3312.31
	12/09/09	3362	61.10	50.69	50.69	0.00	NA	NA	NA	3311.31
	12/16/09	3362	61.10	49.70	50.03	0.33	NA	sheen	30	3312.25
	12/16/09	3362	61.10	50.18	50.18	0.00	NA	NA	NA	3311.82
	12/23/09	3362	61.10	49.62	49.83	0.21	NA	0.25	14.75	3312.35
	12/23/09	3362	61.10	49.98	49.98	0.00	NA	NA	NA	3312.02
	12/30/09	3362	61.10	49.61	49.91	0.30	NA	0.25	9.75	3312.35
	12/30/09	3362	61.10	50.23	50.23	0.00	NA	NA	NA	3311.77



**TABLE 1**  
**2009 GROUNDWATER ELEVATION DATA**

Plains Pipeline, L.P.  
SRS # 2003--00134  
Vacuum to Jal #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 (gallons)	Water (gallons)	
RW-3	01/07/09	3361.42	63.62	49.90	50.05	0.15	Hand Bail	0.25	9.75	3311.50
	01/07/09	3361.42	63.62	50.34	50.34	0.00	NA	NA	NA	3311.08
	01/15/09	3361.42	63.62	49.97	50.25	0.28	Pump	0.75	14.25	3311.41
	01/15/09	3361.42	63.62	50.10	50.14	0.04	NA	NA	NA	3311.31
	01/22/09	3361.42	63.62	49.87	50.16	0.29	Hand Bail/No Sock	1	14	3311.51
	01/22/09	3361.42	63.62	50.06	50.06	0.00	NA	NA	NA	3311.36
	01/28/09	3361.42	63.62	49.88	50.14	0.26	Pump	0.25	9.75	3311.50
	01/28/09	3361.42	63.62	50.02	50.02	0.00	NA	NA	NA	3311.40
	02/04/09	3361.42	63.66	49.97	50.15	0.18	Pump	0.5	14.5	3311.42
	02/04/09	3361.42	63.66	50.35	50.35	0.00	NA	NA	NA	3311.07
	02/11/09	3361.42	63.66	49.96	50.07	0.11	Pump	0.25	19.75	3311.44
	02/11/09	3361.42	63.66	50.11	50.11	0.00	NA	NA	NA	3311.31
	02/17/09	3361.42	63.66	49.89	50.08	0.19	Pump	0.5	34.5	3311.50
	02/17/09	3361.42	63.66	49.94	49.96	0.02	NA	NA	NA	3311.48
	02/25/09	3361.42	63.66	49.94	50.11	0.17	Pump	0.5	19.5	3311.45
	02/25/09	3361.42	63.66	50.05	50.06	0.01	NA	NA	NA	3311.37
	03/04/09	3361.42	63.66	49.88	50.10	0.22	Pump	1	19	3311.51
	03/04/09	3361.42	63.66	50.13	50.13	0.00	NA	NA	NA	3311.29
	03/11/09	3361.42	63.66	50.00	50.13	0.13	Pump	0.25	19.75	3311.40
	03/11/09	3361.42	63.66	50.35	50.35	0.00	NA	NA	NA	3311.07
	03/18/09	3361.42	63.66	49.89	50.01	0.12	Pump	0.1	9.9	3311.51
	03/18/09	3361.42	63.66	50.16	50.16	0.00	NA	NA	NA	3311.26
	03/25/09	3361.42	63.66	49.89	49.89	0.00	Pump	0	22	3311.53
	03/25/09	3361.42	63.66	51.34	51.34	0.00	NA	NA	NA	3310.08
	04/01/09	3361.42	63.66	49.99	49.99	0.00	Flip Sock	NA	NA	3311.43
	04/08/09	3361.42	63.66	50.05	50.05	0.00	Pump	0	15	3311.37
	04/08/09	3361.42	63.66	50.20	50.20	0.00	NA	NA	NA	3311.22
	04/15/09	3361.42	63.66	50.04	50.04	0.00	Pump	0	10	3311.38
	04/15/09	3361.42	63.66	51.73	51.73	0.00	NA	NA	NA	3309.69
	04/22/09	3361.42	63.66	50.13	50.14	0.01	NA	NA	NA	3311.29
	04/29/09	3361.42	63.66	50.00	50.00	0.00	Pump	0	10	3311.42
	04/29/09	3361.42	63.66	50.17	50.17	0.00	NA	NA	NA	3311.25
	05/06/09	3361.42	63.66	50.01	50.01	0.00	Pump	0	15	3311.41
	05/06/09	3361.42	63.66	51.38	51.38	0.00	NA	NA	NA	3310.04
	05/14/09	3361.42	63.66	50.12	50.12	0.00	NA	NA	NA	3311.30
	05/14/09	3361.42	63.66	51.16	51.16	0.00	Pump	0	15	3310.26
	05/19/09	3361.42	63.66	50.06	50.06	0.00	Pump	0	30	3311.36
	05/27/09	3361.42	63.66	50.07	50.07	0.00	NA	NA	NA	3311.35
	05/27/09	3361.42	63.66	51.22	51.22	0.00	Pump	0	15	3310.20
	06/03/09	3361.42	63.66	50.73	50.73	0.00	NA	NA	NA	3310.69
	06/03/09	3361.42	63.66	51.43	51.43	0.00	Pump	0	15	3309.99
	06/11/09	3361.42	63.66	50.22	50.22	0.00	NA	NA	NA	3311.20
	06/11/09	3361.42	63.66	51.33	51.33	0.00	Pump	0	15	3310.09
	06/17/09	3361.42	63.66	50.25	50.25	0.00	NA	NA	NA	3311.17
	06/23/09	3361.42	63.66	50.31	50.31	0.00	NA	NA	NA	3311.11
	07/01/09	3361.42	63.66	50.19	50.19	0.00	Flip Sock	NA	NA	3311.23
	07/07/09	3361.42	63.66	50.19	50.19	0.00	Flip Sock	NA	NA	3311.23
	07/07/09	3361.42	63.66	50.13	50.13	0.00	NA	NA	NA	3311.29
	07/15/09	3361.42	63.66	50.13	50.15	0.02	New sock	NA	NA	3311.29
	07/29/09	3361.42	63.66	50.22	50.22	0.00	Flip Sock	NA	NA	3311.20
	08/05/09	3361.42	63.66	50.18	50.18	0.00	new sock	NA	NA	3311.24
	08/12/09	3361.42	63.66	50.15	50.15	0.00	NA	NA	NA	3311.27
	08/19/09	3361.42	63.66	50.13	50.15	0.02	Pump/flip sock	0.25	9.75	3311.29
	08/19/09	3361.42	63.66	52.50	52.50	0.00	NA	NA	NA	3308.92
	08/26/09	3361.42	63.66	50.29	50.33	0.04	NA	NA	NA	3311.12
	09/02/09	3361.42	63.66	50.10	50.18	0.08	pump	0.25	9.75	3311.31
	09/02/09	3361.42	63.66	52.58	52.58	0.00	NA	NA	NA	3308.84
	09/09/09	3361.42	63.66	50.21	50.21	0.00	pump	sheen	10	3311.21
	09/09/09	3361.42	63.66	51.49	51.49	0.00	NA	NA	NA	3309.93
	09/16/09	3361.42	63.66	50.28	50.28	0.00	NA	NA	NA	3311.14
	09/23/09	3361.42	63.66	50.15	50.20	0.05	pump	0.25	19.75	3311.26
	09/23/09	3361.42	63.66	51.73	51.73	0.00	new sock	NA	NA	3309.69
	09/30/09	3361.42	63.66	50.28	50.28	0.00	NA	NA	NA	3311.14

**TABLE 1**  
**2009 GROUNDWATER ELEVATION DATA**  
 Plains Pipeline, L.P.  
 SRS # 2003--00134  
 Vacuum to Jal #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 (gallons)	Water (gallons)	
RW-3	10/07/09	3361.42	63.66	50.34	50.34	0.00	Flip Sock	0	10	3311.08
	10/07/09	3361.42	63.66	51.02	51.02	0.00	NA	NA	NA	3310.40
	10/14/09	3361.42	63.66	49.58	50.35	0.77	new sock	0	10	3311.72
	10/14/09	3361.42	63.66	52.16	52.16	0.00	NA	NA	NA	3309.26
	10/21/09	3361.42	63.66	50.36	50.36	0.00	NA	NA	NA	3311.06
	10/28/09	3361.42	63.66	50.69	50.69	0.00	pump	0	20	3310.73
	10/28/09	3361.42	63.66	51.80	51.80	0.00	NA	NA	NA	3309.62
	11/04/09	3361.42	63.66	50.21	50.26	0.05	pump	sheen	10	3311.20
	11/04/09	3361.42	63.66	50.75	50.75	0.00	NA	NA	NA	3310.67
	11/11/09	3361.42	63.66	50.20	50.27	0.07	pump	sheen	10	3311.21
	11/11/09	3361.42	63.66	51.29	51.29	0.00	NA	NA	NA	3310.13
	11/18/09	3361.42	63.66	50.13	50.23	0.10	pump	sheen	20	3311.28
	11/18/09	3361.42	63.66	51.69	51.69	0.00	NA	NA	NA	3309.73
	11/25/09	3361.42	63.66	50.20	50.29	0.09	pump	sheen	10	3311.21
	11/25/09	3361.42	63.66	51.20	51.20	0.00	NA	NA	NA	3310.22
	12/02/09	3361.42	63.66	50.19	50.26	0.07	pump	sheen	10	3311.22
	12/02/09	3361.42	63.66	51.85	51.85	0.00	NA	NA	NA	3309.57
	12/09/09	3361.42	63.66	50.20	50.33	0.13	pump	sheen	10	3311.20
	12/09/09	3361.42	63.66	52.01	52.01	0.00	NA	NA	NA	3309.41
	12/16/09	3361.42	63.66	50.24	50.37	0.13	pump	sheen	10	3311.16
	12/16/09	3361.42	63.66	51.93	51.93	0.00	NA	NA	NA	3309.49
RW-4	12/23/09	3361.42	63.66	50.15	50.20	0.05	pump	sheen	15	3311.26
	12/23/09	3361.42	63.66	50.85	50.85	0.00	NA	NA	NA	3310.57
	12/30/09	3361.42	63.66	50.16	50.23	0.07	pump	sheen	10	3311.25
	12/30/09	3361.42	63.66	51.34	51.34	0.00	NA	NA	NA	3310.08
	01/07/09	3363.23	63.47	ND	49.61	ND	NA	NA	NA	3313.62
	02/04/09	3363.23	60.98	ND	49.71	ND	NA	NA	NA	3313.52
	02/17/09	3363.23	62.80	ND	49.71	ND	NA	NA	NA	3313.52
	03/04/09	3363.23	60.93	ND	49.68	ND	NA	NA	NA	3313.55
	04/08/09	3363.23	60.93	ND	49.68	ND	NA	NA	NA	3313.55
	04/08/09	3363.23	60.93	ND	49.71	ND	NA	NA	NA	3313.52
	05/06/09	3363.23	60.93	ND	49.73	ND	NA	NA	NA	3313.50
	05/19/09	3363.23	60.93	ND	49.80	ND	NA	NA	NA	3313.43
	06/03/09	3363.23	60.93	ND	49.79	ND	NA	NA	NA	3313.44
	07/15/09	3363.23	60.93	ND	49.83	ND	NA	NA	NA	3313.40
RW-5	08/05/09	3363.23	60.93	ND	49.86	ND	NA	NA	NA	3313.37
	08/26/09	3363.23	63.51	ND	49.90	ND	NA	NA	NA	3313.33
	09/02/09	3363.23	63.51	ND	49.88	ND	NA	NA	NA	3313.35
	10/07/09	3363.23	63.51	ND	49.89	ND	NA	NA	NA	3313.34
	11/18/09	3363.23	63.51	ND	49.92	ND	NA	NA	NA	3313.31
	12/02/09	3363.23	63.51	ND	49.97	ND	NA	NA	NA	3313.26
	01/07/09	3362.38	63.18	ND	49.20	ND	NA	NA	NA	3313.18
	02/04/09	3362.38	60.91	ND	49.26	ND	NA	NA	NA	3313.12
	02/17/09	3362.38	63.15	ND	49.25	ND	NA	NA	NA	3313.13
	03/04/09	3362.38	63.65	ND	49.20	ND	NA	NA	NA	3313.18
	04/08/09	3362.38	63.65	ND	49.26	ND	NA	NA	NA	3313.12
	05/06/09	3362.38	63.65	ND	49.24	ND	NA	NA	NA	3313.14
	05/19/09	3362.38	63.65	ND	49.35	ND	NA	NA	NA	3313.03
	06/03/09	3362.38	63.65	ND	49.35	ND	NA	NA	NA	3313.03
	07/15/09	3362.38	63.65	ND	49.40	ND	NA	NA	NA	3312.98
	08/05/09	3362.38	63.65	ND	49.42	ND	NA	NA	NA	3312.96
	08/26/09	3362.38	64.00	ND	49.42	ND	NA	NA	NA	3312.96
	09/02/09	3362.38	64.00	ND	49.37	ND	NA	NA	NA	3313.01
	10/07/09	3362.38	64.00	ND	49.44	ND	NA	NA	NA	3312.94
	11/18/09	3362.38	64.00	ND	49.43	ND	NA	NA	NA	3312.95
	12/02/09	3362.38	64.00	ND	49.48	ND	NA	NA	NA	3312.90

**TABLE 1**  
**2009 GROUNDWATER ELEVATION DATA**  
 Plains Pipeline, L.P.  
 SRS # 2003--00134  
 Vacuum to Jal #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 (gallons)	Water (gallons)	
RW-6	01/07/09	3363.11	63.84	ND	50.46	ND	NA	NA	NA	3312.65
	02/04/09	3363.11	63.85	ND	50.51	ND	NA	NA	NA	3312.60
	02/17/09	3363.11	64.15	ND	50.50	ND	NA	NA	NA	3312.61
	03/04/09	3363.11	63.81	ND	50.48	ND	NA	NA	NA	3312.63
	04/08/09	3363.11	63.81	ND	50.54	ND	NA	NA	NA	3312.57
	05/06/09	3363.11	63.81	ND	50.59	ND	NA	NA	NA	3312.52
	05/19/09	3363.11	63.81	ND	50.64	ND	NA	NA	NA	3312.47
	06/03/09	3363.11	63.81	ND	50.60	ND	NA	NA	NA	3312.51
	07/15/09	3363.11	63.81	ND	50.70	ND	NA	NA	NA	3312.41
	08/05/09	3363.11	63.81	ND	50.70	ND	NA	NA	NA	3312.41
	08/26/09	3363.11	64.12	ND	50.72	ND	NA	NA	NA	3312.39
	09/02/09	3363.11	64.12	ND	50.70	ND	NA	NA	NA	3312.41
	10/07/09	3363.11	64.12	ND	50.72	ND	NA	NA	NA	3312.39
	11/18/09	3363.11	64.12	ND	50.72	ND	NA	NA	NA	3312.39
	12/02/09	3363.11	64.12	ND	50.79	ND	NA	NA	NA	3312.32

Note: Wells resurveyed in November 2006.

RW-2 used as bench mark for November 2006 well survey (3362.00).

NA: Not Applicable

NG: Not Gauged

**TABLE 2**

Historical Groundwater Elevation Data  
*(Available on CD attached to back cover)*

**TABLE 3**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
 Plains Pipeline, L.P.  
 SRS No. 2003--00134  
 Vacuum to Jal #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 <sup>a</sup>	<0.00036	0.0033	0.0015 J
MW-1	09/12/06	T14676-1	0.512 <sup>a</sup>	<0.00020	<0.00033	<0.00036
MW-1	12/06/06	T15618-1	0.452 <sup>a</sup>	<0.00020	0.0049	<0.00036
MW-1	02/28/07	T16494-1	0.481 <sup>a</sup>	<0.00020	0.0191	<0.00036
MW-1	05/30/07	T17645-1	0.213 <sup>a</sup>	<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 <sup>c</sup>	<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	180058	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	9052114	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-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	180059	<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	9052114	<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-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	180060	<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	9052114	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

# TABLE 3

## GROUNDWATER SAMPLE ANALYTICAL RESULTS

Plains Pipeline, L.P.  
SRS No. 2003--00134  
Vacuum to Jal #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	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	180061	<0.00100	<0.00100	<0.00100	<0.00100
MW-4	02/17/09	187731	<0.00100	<0.00100	<0.00100	<0.00100
MW-4	05/19/09	9052114	<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-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	180062	<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	9052114	<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-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
MW-6	11/19/08	180063	<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	9052114	<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-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	180064	<0.00100	<0.00100	<0.00100	<0.00100
MW-7	02/17/09	187734	<0.00100	<0.00100	<0.00100	<0.00100

**TABLE 3**  
**GROUNDWATER SAMPLE ANALYTICAL RESULTS**  
 Plains Pipeline, L.P.  
 SRS No. 2003--00134  
 Vacuum to Jal #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-7	05/19/09	9052114	<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
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	180065	<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	9052114	<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-5	12/06/06	T15618-9	0.0035	0.00095 J	0.00043 J	<0.00036
RW-5	02/28/07	T16494-9	<b>0.0193</b>	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	180066	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	9052114	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-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	180067	<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	9052114	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-1, RW-2 and RW-3 not sampled due to presence of Phase Separated Hydrocarbons

<sup>a</sup> Result is from Run #2.

J Indicates an estimated value

Concentration in **Bold** = above NMOCD Criteria

**TABLE 4**  
**GROUNDWATER ANALYTICAL RESULTS for BTEX from Wells with PSH/Sheen**  
**Plains Pipeline, L.P.**  
**SRS No. 2003--00134**  
**Vacuum to Jal #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 (mg/L)			
			0.010	0.750	0.750	0.620
RW-1	05/28/08	T22367-8	0.646	0.217	0.163	0.292
RW-1	05/19/09	9052114	0.978	0.355	0.238	0.463
RW-2	05/28/08	T22367-9	0.623	0.045	0.0921	0.157
RW-2	05/19/09	9052114	0.0552	0.0167	0.0176	0.0289
RW-3	05/28/08	T22367-10	0.608	0.0347	0.515	0.0726
RW-3	05/19/09	9052114	0.45	0.247	0.22	0.152

Concentration in **Bold** = above NMOCD Remediation



TABLE 5  
GROUNDWATER ANALYTICAL RESULTS for  
POLYNUCLEAR AROMATIC HYDROCARBONS (PAHs) from wells with PSH/Sheen  
Plains Pipeline, L.P.  
SRS No. 2003-00134  
Vacuum to Jal Mainline #5  
Lea County, New Mexico

Monitoring Well	Sample Date	Lab Report #	Acenaphthylene	Acenaphthene	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	Napthalene	1- Methylnaphtalene	2-Methylnaphtalene	Total naphthalenes	TPH-GRO (C6-C10)	TPH (C10-C28)
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)
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				30**		
RW-1	5/28/2008	T22367-8	<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	<1.3	<2.5	<1.6	14.1		13	27.1	9.01	3.28
RW-1	5/19/2009	9052114	<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	17.6	19.9	17.2	54.7	3.73	<0.876
RW-2	5/28/2008	T22367-9	<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	10		7.4	17.4	3.61	1.53
RW-2	5/19/2009	9052114	<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	2.66	5.64	4.16	12.46	1.77	<0.876
RW-3	5/28/2008	T22367-10	<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	13.5		7.8	21.3	3.81	0.292
RW-3	5/19/2009	9052114	<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	25	27.2	22.6	74.8	3.1 J	1.18 J

< = Not Detected  
J = Indicates an estimated value above the method detection limit (MDL)  
\*\* = NM Water Quality Standard  
Tap Water\* = NMED Tap Water Soil screening levels for residential scenarios.

**TABLE 6**  
**2009 MONTHLY PSH AND DISSOLVED PHASE**  
**GROUNDWATER RECOVERY DATA**

Plains Pipeline, L.P.  
SRS # 2003--00134  
Vacuum to Jal Mainline #5  
Lea County, New Mexico

Month	Volume of PSH recovered in gallons	Volume of dissolved phase groundwater recovered in gallons
January	4.50	115.50
February	4.00	248.00
March	2.70	189.30
April	1.25	88.75
May	3.00	204.50
June	2.25	122.75
July	2.50	44.25
August	1.00	54.00
September	1.75	123.25
October	1.50	128.50
November	1.00	169.00
December	0.75	179.25
Total	26.20	1667.05

## **APPENDIX C**

### **Groundwater Analytical Reports**

*(Available on CD attached to back cover)*

1<sup>st</sup> Quarter 2009 Analytical Reports– 9021801

2<sup>nd</sup> Quarter 2009 Analytical Reports– 9052114

3<sup>rd</sup> Quarter 2009 Analytical Reports– 9082802

4<sup>th</sup> Quarter 2009 Analytical Reports– 9112012

## **APPENDIX D**

### **C-141 NMOCD Release Notification Form**

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

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised March 17, 1999

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

### Release Notification and Corrective Action

#### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company <b>EOTT Energy LLC</b>	Contact <b>Frank Hernandez</b>
Address <b>PO Box 1660 5805 East Highway 80 Midland, Texas 79702</b>	Telephone No. <b>713.253.7006</b>
Facility Name <b>Vacuum to Jal 14" Mainline #5</b>	Facility Type <b>14" Steel Pipeline</b>

Surface Owner <b>Greg Holt</b>	Mineral Owner	Lease No.
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#### LOCATION OF RELEASE

Unit Letter <b>2</b>	Section <b>2</b>	Township <b>T22S</b>	Range <b>R37E</b>	Feet from the	North/South Line	Feet from the	East/West Line	County: <b>Lea</b> <b>Lat. 32 25' 39.006"N</b> <b>Lon. 103 07' 43.155"W</b>
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#### NATURE OF RELEASE

Type of Release <b>Crude Oil</b>	Volume of Release <b>20 bbls barrels</b>	Volume Recovered <b>5 bbls barrels</b>
Source of Release <b>14" Steel Pipeline</b>	Date and Hour of Occurrence <b>5-23-03 @ 3:00 PM</b>	Date and Hour of Discovery <b>4:00 PM @ 5-23-03</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Buddy Hill</b>	
By Whom? <b>Pat McCasland, EPI</b>	Date and Hour <b>5-23-03 @ 8:00 PM</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. <b>NA</b>	

If a Watercourse was Impacted, Describe Fully.\*  
**NA**

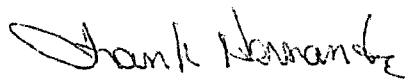
Describe Cause of Problem and Remedial Action Taken.\*

**14" Steel Pipeline. The cause was either internal or external corrosion. The line was being pressure tested at the time of the occurrence. The line was depressured and a line repair clamp installed. Contaminated soil placed on a plastic barrier.**

Describe Area Affected and Cleanup Action Taken.\*

**~200' x 100' 8,730 sqft Site will be delineated to determine the vertical and horizontal extents of contamination. Contaminated soil will be disposed of or remediated on site. Remedial Goals: TPH 8015m = 1000 mg/Kg, Benzene = 10 mg/Kg, and BTEX, i.e., the mass sum of Benzene, Ethyl Benzene, Toluene, and Xylenes = 50 mg/Kg.**

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

Signature: 		<b><u>OIL CONSERVATION DIVISION</u></b>	
Printed Name: Frank Hernandez		Approved by District Supervisor:	
Title: District Environmental Supervisor	Approval Date:	Expiration Date:	
Date: May 27, 2003 Phone: 713.253.7006	Conditions of Approval:		Attached <input type="checkbox"/>

\* Attach Additional Sheets If Necessary