2019 ANNUAL GROUNDWATER MONITORING REPORT
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
UL-A, Section 2, T22S, R37E
NMOCD No.: 1R-0464
Plains SRS No.: 2003-00134

PREPARED FOR

PLAINS PIPELINE, L.P.

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1.0 INTRODUCTION AND OBJECTIVES

1.1 Objectives and Site Information

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

This report presents the data collected at the Site during weekly groundwater gauging and phase separated hydrocarbon (PSH) recovery and four (4) quarterly groundwater sampling events conducted during 2019. The objective of the on-going quarterly groundwater sampling activities at the Site is to monitor the concentration of chemicals of concern (COCs) in the affected groundwater. Weekly PSH recovery activities are conducted to remove residual crude oil from groundwater.

EnTech was retained by Plains in 2012 to manage continued remediation activities at the Site. According to the initial New Mexico Oil Conservation Division (NMOCD) Response Notification (NMOCD Form C-141), Mr. Pat McCasland of Environmental Plus, Inc. (EPI) reported the release, on behalf of Mr. Frank Hernandez of EOTT Energy, LLC (EOTT), on May 23, 2003 (a copy of the C-141 Release Notification Form was provided in the 2010 Annual Report Dated March 2011). The leak was apparently caused by internal or external corrosion. The line was being pressure tested when the leak occurred.

1.2 Previous Remedial Responses and Environmental Investigations

The previous environmental consultant for the Site was EarthCon Consultants, Inc. (EarthCon). As of July 1, 2012, EnTech was retained by Plains for consulting services for the Site. Even though the environmental consultant for the Site has changed, the same personnel were retained by EnTech to complete work for the Site.

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 (2) areas that required excavation. The larger of the excavations was an irregularly shaped area measuring approximately 200-feet by 40-feet, and affected a surface area of approximately 8,885-square feet (ft^2). The smaller area had an L-shaped footprint located east of the southernmost portion of the larger excavation that measured

approximately 40-feet by 60-feet and affected a surface area of approximately 2,500-ft^2. The EPI data also revealed the presence of a historical spill at the Site identified by the presence of an asphaltene 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 (yds^3) 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 (4) trenches in areas of known hydrocarbon-impact to further delineate depths of contamination and to determine if the base of the excavation was contaminated.

In January 2006, EarthCon collected twelve (12) composite soil samples from the excavated material to evaluate the concentration of hydrocarbons remaining. In March 2006, EarthCon oversaw the installation of three (3) soil borings which were subsequently converted to monitor wells (MW-1 through MW-3) at the Site. Following the installation of the three (3) monitor wells, EarthCon began weekly gauging and PSH recovery, and quarterly groundwater sampling activities at the Site.

Based on the available soil and groundwater data, a Soil Remediation Plan (SRP) was prepared and submitted to the NMOCD in May 2006. The primary objective of the SRP was to excavate the highly affected soils and to isolate and control residual concentration of COCs, preventing them from further affecting the groundwater. The plan called for the placement of an impermeable liner at the base of the excavation, eliminating migration. The SRP was approved by the NMOCD in June 2006. During October and November 2006, EarthCon collected additional confirmation soil samples in the open excavations and supervised over-excavation of the impacted area. installation of a liner and backfilling activities. The soil remediation activities were documented in the *Soil Closure Report* dated March 2007. Groundwater investigation activities were also conducted at the Site. Details associated with these comprehensive site investigation activities 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 soils established for this Site. Additionally, these reports establish that the COCs in groundwater have been delineated. The reports were submitted to the NMOCD for final regulatory approval for closure of soil issues at this Site, and a request made for a “No Further Action Required for Soil Remediation” letter from the NMOCD.

The groundwater remediation goals and the proposed remedial approach are discussed in a Groundwater Work Plan submitted to the NMOCD in December 2009. Monitored

natural attenuation is the established remedial approach for this Site along with source reduction activities including weekly PSH recovery and quarterly groundwater monitoring. Additional assessment activities occurred at the Site in June of 2011 with the installation of recovery wells RW-1 through RW-6 were initially installed to define the lateral extent of affected groundwater and subsequently converted to recovery wells to enhance product recovery efforts.

In July 2012, EnTech was retained by Plains to continue remediation and groundwater activities at the Site.

Groundwater and product recovery activities at the Site continued in 2013. Specifically, two (2) recovery wells (RW-7 and RW-8) were installed in 2013. Since 2013, quarterly groundwater sampling has continued at the Site along with weekly PSH recovery.

This report summarizes the activities conducted in 2019 for groundwater sampling, groundwater analysis and PSH recovery activities.

1.3 Regulatory Framework

Based on standards outlined in New Mexico Administrative Code (NMAC), Title 20, Chapter 6, Part 2, the remediation criteria for groundwater at the Site are as follows:

COC	Limit (mg/L)
Benzene	0.01
Toluene	0.75
Ethylbenzene	0.75
Total Xylenes	0.62
Polynuclear Aromatic Hydrocarbons (PAH) (1,2)	0.03
Benzo-a-pyrene (2)	0.0007

1 –PAHs: Total naphthalenes plus monomethylnaphthalenes
2 –PAH remediation standards will be used as target concentrations only upon PSH removal.
mg/L – milligrams per liter

In addition to using the above values as the target cleanup goals for COC concentrations in groundwater at the Site, PSH removal is considered an integral part of ongoing remediation activities.

1.4 Limitations

EnTech has examined and relied upon the file information provided by Plains and their contractors, and conversations with Plains personnel and their contractors familiar with the Site in question. EnTech has not conducted an independent examination of the

information contained in external project files or that provided by Plains or their contract personnel. Furthermore, we assume the genuineness of the documents reviewed and that the information provided in these documents and during the interviews of Plains and contract personnel are true and accurate. EnTech has prepared this report using the level of care and professionalism in the industry for similar projects under similar conditions. EnTech 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. EnTech believes the conclusions stated herein are factual, but no guarantee is made or implied.

2.0 GROUNDWATER ASSESSMENT AND RESULTS

2.1 Groundwater Sampling Methodology

Activities conducted at the Site in 2019 primarily consisted of gauging wells for groundwater levels, determining the presence or absence of PSH, and recovering PSH using absorbent socks, hand bailing, and submersible pumps in recovery and monitor wells. Groundwater sampling of PSH-free monitor/recovery wells was also completed on a quarterly basis to evaluate the extent of the dissolved-phase hydrocarbon plume.

Measurements of the depth to groundwater and product thickness in wells with hydrocarbon sheen or PSH were completed during the weekly PSH recovery and groundwater sampling events. Seven (7) groundwater monitor wells (MW-1 through MW-7) and eight (8) recovery wells (RW-1 through RW-8) were gauged using an oil/water interface probe. The well locations are shown on **Figure 2**. Recovery well RW-8 was installed in November 2013 to enhance product recovery efforts at the Site. Information regarding the installation of RW-8 was included in the *2013 Soil Investigation and Groundwater Monitoring* report submitted to the NMOCD in March 2014.

Groundwater level elevations and the presence of PSH, if any, were noted for each monitor/recovery well on a quarterly basis. In cases where no measurable PSH was detected by the interface probe, the downhole sensor of the probe was examined for the presence of PSH upon removal from the well. Four (4) recovery wells (RW-1, RW-2, RW-3, and RW-8) contained a PSH thicknesses ranging from sheen to 0.22-feet during 2019. These wells were sampled annually to evaluate remaining COC concentrations and polycyclic aromatic hydrocarbons (PAH). Starting in the second quarter of 2008 all recovery and monitor wells with PSH or sheen were required to be sampled annually. Additionally, after a review of the 2010 Annual Groundwater Monitoring Report, the NMOCD requested that any monitor well which had a COC exceeding NMOCD standards be sampled for PAHs. To meet these two (2) requirements and for consistency, groundwater samples were collected during the second quarter of 2011 through 2019 from recovery wells RW-1 through RW-3, and in the second quarter of 2014 through 2019 from recovery well RW-8 for PAH analysis.

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

Groundwater samples were transferred directly from the disposable bailers into the appropriate laboratory-supplied sample containers. The sample containers were then packaged to prevent breakage, placed on ice in a cooler, and shipped to Pace Analytical (Pace) of The Woodlands, Texas for analysis. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by Environmental Protection Agency (EPA) Method SW 8260B and PAHs by EPA Method SW 8270C.

2.2 Groundwater Gauging

Table 1 summarizes groundwater gauging (elevation and PSH thickness) measurements taken before each quarterly groundwater sampling event in 2019. Groundwater elevations and PSH thickness measurements were taken in four (4) recovery wells (RW-1 through RW-3 and RW-8) during PSH recovery efforts. Complete historical groundwater elevation and PSH thickness measurements since September 14, 2005 are presented in **Table 2**. The groundwater elevation calculations are based on the top of polyvinyl chloride (PVC) well casing elevations, which were last surveyed on March 15, 2005 by EarthCon, and updated in December 2013 by EnTech for the two (2) new recovery wells installed in November 2013 (RW-7 and RW-8).

2.3 Groundwater Gradient and Flow Direction

Using the 2019 groundwater gauging data summarized in **Table 1**, groundwater gradient maps illustrating groundwater flow direction are included as **Figures 3A** through **3D**. The calculated groundwater gradient and estimated groundwater flow direction are based on the gauging data obtained on February 12, May 8, August 22, and November 6, 2019. The hydraulic gradient in 2019 ranged from 0.0031 to 0.00356 foot/foot (ft/ft), based on groundwater elevations measured between monitor well MW-4 and recovery well RW-6. The groundwater flow direction has consistently been to the south.

2.4 Groundwater Analytical Results

Groundwater samples were collected on February 12, May 8, August 22, and November 6, 2019 from all wells that did not contain PSH (see **Table 3**). The monitor/recovery wells (MW-1 through MW-7 and RW-4 through RW-7) were purged by removing a minimum of three (3) to five (5) well volumes of groundwater. In some instances, depending on groundwater conditions, wells were bailed dry three (3) times using a disposable bailer and allowed to recover to at least 80% of the initial volume before collecting samples. Groundwater samples were collected and transferred into laboratory-supplied sample containers. The sample containers were placed on ice in a cooler and shipped to Pace, in The Woodlands, Texas for analysis. Groundwater samples were analyzed for BTEX in all four (4) quarters of 2019.

Analytical results reported for the groundwater samples collected from wells MW-1 through MW-7 and RW-4 through RW-7, indicated BTEX concentrations or concentrations below the laboratory method detection limits (MDLs) below the NMOCD criteria for all four (4) quarters of 2019.

Groundwater samples were also collected from recovery wells exhibiting PSH (RW-1 through RW-3 and RW-8) during the 2nd quarter of 2019. Analysis of the samples indicated benzene concentrations ranging from below MDLs to 0.064 milligrams per Liter (mg/L). Benzene concentrations analyzed in the groundwater samples collected from RW-1, RW-2, and RW-8 were all above the NMOCD criteria of 0.01 mg/L. Analysis of all other BTEX constituents (i.e., toluene, ethylbenzene, and total xylenes) occurred below MDLs or levels below the NMOCD criteria.

Groundwater samples collected from recovery wells RW-1, RW-3 and RW-8 were also evaluated for polycyclic aromatic hydrocarbons (PAHs) which indicated concentrations of naphthalene, acenaphthene, fluorene, phenanthrene, chrysene, and dibenzofuran (RW-3 only) above the method detection limit (MDL) but below the NMOCD criteria. Concentrations of total methylnaphthalenes were also detected during analysis, however the concentration observed in the sample collected from RW-8 (37.6 µg/L) was the only sample to exceed the NMOCD criteria of 30 micrograms per Liter (µg/L).

Table 2.1 below summarizes the COC concentrations in which NMOCD Remediation Criteria exceedances were observed in 2019. Benzene concentrations reported in exceedance of NMOCD standards are marked in **bold**. The 2019 analytical results are presented in **Table 3**.

	Table 2.1				
	2019 COC Detected Concentrations (mg/L)				
NMOCD Remediation Criteria (mg/L)	First Quarter	Second Quarter		Third Quarter	Fourth Quarter
	Benzene	Benzene	Total Methylnaphthalenes (µg/L)	Benzene	Benzene
	0.01	0.01	30.00	0.01	0.01
RW-1	NS	**0.0110**	NS	NS	<0.005
RW-2	NS	**0.0438**	NS	NS	NS
RW-3	NS	<0.005	NS	NS	NS
RW-8	NS	**0.0624**	**37.6**	NS	NS

Note: Concentrations in bold indicate exceedances of NMOCD Remediation criteria.
NS –Not sampled due to PSH sheen or a visible PSH sheen.
mg/L – milligrams per liter

Historical analytical results are presented in **Table 4**. Laboratory analytical reports and data packages are provided in **Appendix A**. The groundwater analytical data for each quarterly sampling event of 2019 are illustrated in **Figures 4A** through **4D**.

2.5 Groundwater Waste Disposal

Purge water from well sampling at wells MW-1 through MW-7 and recovery wells RW-1 through RW-8 is placed in the 1,100-gallon aboveground storage tank (AST) located at the Site. These liquids are vacuumed from the AST and transported off-Site for disposal by Gravity of Eunice, New Mexico.

3.0 PSH RECOVERY

3.1 PSH Recovery Methodology

In addition to collecting groundwater samples, EnTech performed weekly visits to the Site to gauge and periodically recover PSH from recovery wells exhibiting PSH or sheen (RW-1 through RW-3, and RW-8). Recovery well RW-8, was installed in November 2013 and added for PSH recovery on a weekly basis. Measurements to PSH and water levels were recorded during each Site visit (see **Table 2**). PSH recovery activities were completed on a weekly basis using submersible pumps, hand bailing and/or absorbent socks. Routine weekly PSH recovery activities typically consisted of the removal of 5- to 20-gallons of groundwater and dissolved-phase hydrocarbons and approximately 1-gallon of PSH from the above referenced wells.

3.2 PSH Recovery via Pumping and Manual Bailing

During 2019, measurable PSH was observed in recovery wells RW-1 through RW-3 and RW-8. Annual PSH and dissolved phase groundwater recovery data for 2019 are presented in **Table 6**.

The PSH measured in recovery well RW-1 in 2019, indicated stable thicknesses. The maximum PSH thickness observed in RW-1 (0.08-foot), occurred in the second quarter of 2019 and represents a reduction from the maximum thickness observed in 2018 (0.21-foot).

The maximum PSH thickness measured in recovery well RW-2 in the fourth quarter of 2019 (0.99-foot) represents an increase from the maximum PSH thickness observed in 2018 (0.36-foot). The calculated average product thickness measured in RW-2 in 2019 was 0.21-foot, which was a minor increase of the calculated average product thickness in 2018 (0.19-feet).

The PSH thicknesses observed in recovery well RW-3 in 2019 ranged from 0.01-foot to 0.28-foot. These levels were a reduction as compared to the maximum thickness observed in 2018 (0.34-foot). The calculated average thickness for 2019 was 0.09-foot, a reduction from 0.17-foot observed in 2018.

The PSH thicknesses ranging from nondetectable to 0.78-foot were observed in recovery well RW-8 in 2019. The average calculated thickness in 2019 of 0.14-foot was a decrease compared to the average calculated average thickness observed in 2018 (0.36-foot).

3.3 PSH Recovery via Mobil Duel Phase Extraction (MDPE)

PSH recovery via MDPE was conducted at the Site during 2019 by Plains consultant Talon/LPE (Talon). Three (3) MDPE events were conducted in May, September, and December of 2019 for durations of 12-hours each. MDPE removes multiple phases of hydrocarbons (liquid, dissolved, absorbed and vapor phase) simultaneously by extracting liquids, vapors, and contaminated groundwater from multiple monitor and recovery wells. This is completed with a truck-mounted vacuum and liquid handling system integrated with a mobile hydrocarbon vapor treatment system. Typically, high vacuum is applied to multiple wells with downhole apparatuses to control the fluid elevation in each well. Therefore, the vacuum forcefully induces contaminant liquids and vapors to be simultaneously pulled into the extraction wells from the vadose zone, capillary fringe, and the saturated zone. Extracted contaminant liquids are collected in a designated tank at the Site. Volatile vapor emissions are treated by the integrated vapor destruction systems. Fluids from the MDPE events were disposed of separately by Talon and stored in separate tanks at the facility.

All three (3) MDPE events completed in 2019 were performed on recovery well RW-8 with an estimated total of 29.82-gallons equivalent of PSH removed. Event totals included: 13.97-gallons removed on May 28 (4.97-gallons of vapor PSH and 9.00-gallon of fluid PSH); 11.67-gallons removed on September 11 (5.67-gallon of vapor PSH and 6.00-gallons of fluid PSH; and, 4.18-gallons removed on December 13 (1.18-gallons of vapor PSH and 3.00-gallons of liquid PSH).

A cumulative total of 2,920-gallons of fluid were generated during the three (3) MDPE events in 2019.

The MDPE report prepared by Talon is included as Appendix B.

3.4 PSH Waste Disposal

Approximately 10-gallons of PSH and 210-gallons total of affected groundwater were recovered from the wells containing PSH or sheen during 2019 as part of weekly PSH recovery. These liquids are vacuumed from the tank and transported off-Site disposal by Gravity of Eunice, New Mexico.

4.0 MONITORED NATURAL ATTENUATION

4.1 Regulatory Framework for Monitored Natural Attenuation

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

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

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

4.2 Plume Stability and Monitored Natural Attenuation

The Site is currently undergoing Plume Stability Analysis. While samples are collected observing select groundwater quality parameters (i.e., oxygen-reduction potential, dissolved oxygen, etc.), insufficient data exists at this time to perform a reliable evaluation.

While plume stability using MNA cannot be fully evaluated at this time, PLOEs do exist and include:

- The benzene concentrations reported in the groundwater samples collected from the monitor and recovery wells down-gradient of the plume (MW-1, MW-5 through MW-7, and RW-6) have been below MDLs or at levels below the NMOCD criteria since 2011;
- Benzene concentrations reported in the groundwater samples collected from cross-gradient monitor wells (MW-2 and RW-5) have remained at nondetectable levels or concentrations below the NMOCD criteria since 2008. Recovery well RW-7 was installed in 2013 and analysis of groundwater samples since installation have all indicated concentrations were below MDLs through 2019;
- Benzene concentrations analyzed in groundwater samples collected from recovery wells in proximity to the release area (RW-1 through RW-3 and RW-8) appear to be stable, while PSH recovery during MDPE activities declined during 2019; and,
- PSH thicknesses observed in recovery wells RW-1 through RW-3 and RW-8 decreased during 2019. Specifically, the thickness observed in RW-1 decreased from a maximum of 0.07-foot at the end of 2018 to a sheen at the end of 2019; the observed thickness in RW-2 which decreased from 0.35-foot at the end 2018 to 0.04-foot at the end of 2019; the observed thickness in RW-3 which decreased from 0.19-foot at the end of 2018 to 0.03-foot at the end of 2019; and, the observed thickness in RW-8 which decreased from 0.18-foot at the end of 2018 to below MDLs at the end of 2019.

The dissolved phase plume was evaluated in 2019 by analyzing groundwater samples collected quarterly from eleven (11) PSH-free monitor and recovery wells. Groundwater samples were collected from monitor wells MW-1 through MW-7 and recovery wells RW-4 through RW-7. Laboratory analysis of those samples collected from PSH-free wells during 2019 indicated BTEX concentrations or concentrations below MDLs or the NMOCD remediation criteria.

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. An introduction to plume stability analysis and the basis for the plume evaluation at the Site was presented in the 2009 Annual report.

This analysis was conducted in order to understand the overall stability of the benzene plume during 2006 through 2019. This study included the development of benzene concentration isopleths maps and an average of the benzene concentrations reported in the four (4) quarterly groundwater sampling events used for all the wells with no PSH (specifically monitor wells MW-1 through MW-7 and recovery wells RW-4 through RW-

7). Since the wells with PSH were sampled only during the second quarter groundwater sampling events from 2008 through 2019, the benzene concentrations reported during this sampling event were used in the plume evaluation. The plume characteristics such as the plume area, average concentration, mass, and centers of mass were calculated for each of the benzene plumes using numerical methods.

A SLOE is provided by the Mann Kendall Trend Test (MKTT), which is a statistical method used to analyze data collected over time for consistently increasing or decreasing trends. It is a non-parametric test, which means it works for all distributions (i.e. the data doesn't have to meet the assumption of normality), but the data should have no serial correlation.

The test can be used to find trends for as few as four (4) samples. However, with only a few data points, the test has a high probability of not finding a trend when one would be present if more points were provided. The more data points available, the more likely the test is going to find a true trend. The minimum number of recommended measurements is therefore at least eight (8) to ten (10) (Reference: Prashanth Khambhammettu: "Mann-Kendall Analysis for the Fort Ord Site", HydroGeoLogic, Inc.-OU-1 2004 Annual Groundwater Monitoring Report-Former Fort Ord, California, 2005).

Concentrations of benzene analyzed in groundwater samples collected from the Site between June 3, 2011 and May 14, 2019 were evaluated using the MKTT. Only monitor wells with detectable concentrations of benzene in 2019 were evaluated.

Monitor wells evaluated by MKTT for benzene included recovery well RW-1 through RW-3 and RW-8. The confidence factor [CF] for analysis of benzene concentrations is listed in brackets following the well. Recovery well RW-1 [72.6%] indicated a "stable" trend, whereas RW-2 [86.2%], RW-3 [72.6%], and RW-8 [88.3%] all indicated "no" trend. The "no" trend evaluation is believed to be due to the fluctuating historical benzene concentrations observed in RW-2 and RW-3. The "no" trend evaluation calculated for recovery well RW-8 appears to be due to the limited number of sample results (i.e., <8) A copy of the MKTT analysis is included in Appendix C.

The benzene isopleths maps for 2008 through 2019 are presented in **Figures 5 through 17** respectively. Previous maps prepared by EarthCon are presented in **Figures 5 through 10**. The analytical data collected for the Site used for the plume stability analysis indicates that the benzene plume emanating from the Site has a decreasing trend in concentration whereas the size and mass of the PSH plume appears to be stable.

5.0 FINDINGS

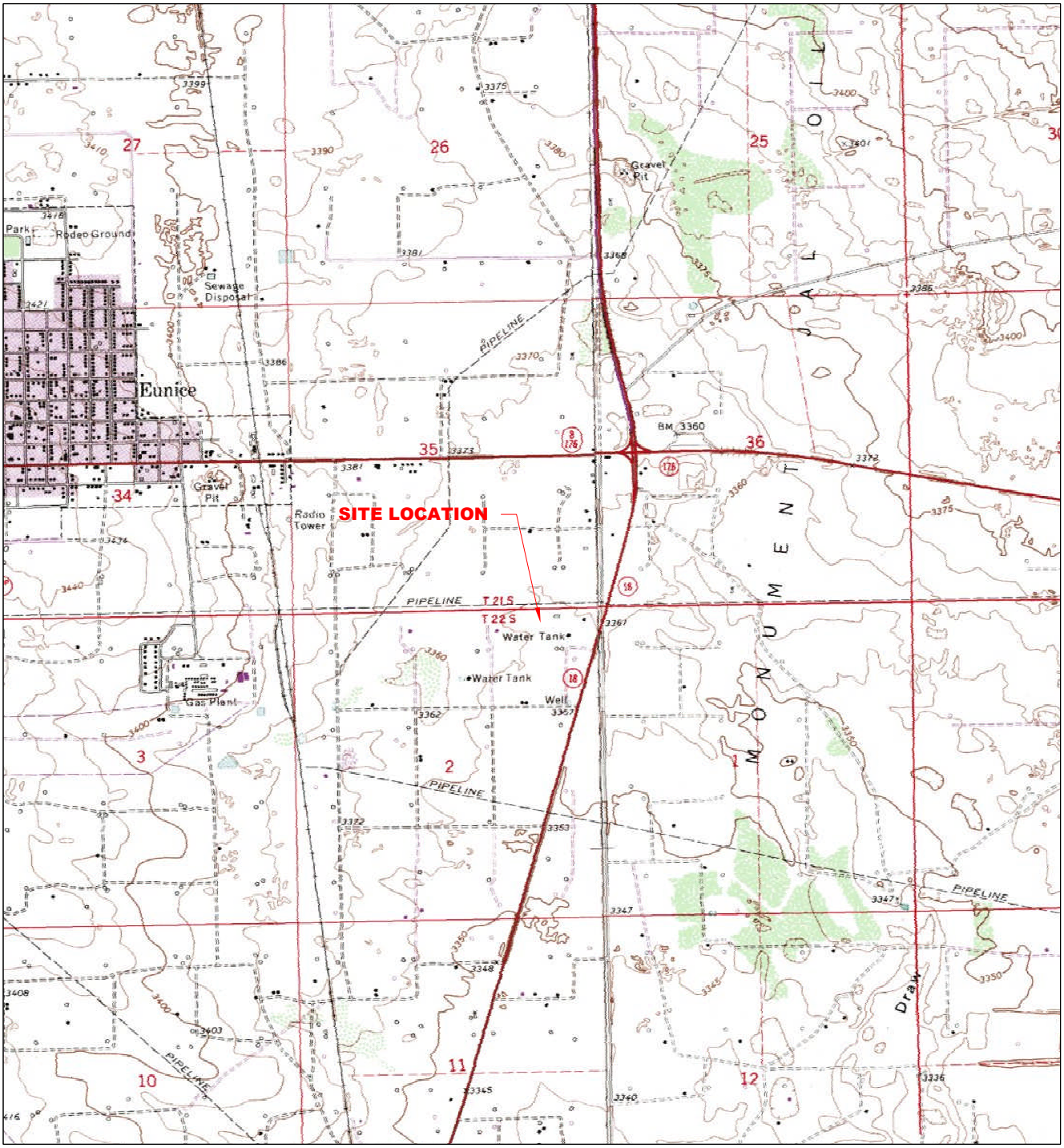
Findings and recommendations resulting from 2019 groundwater monitoring at the Site are summarized below.

- Groundwater flow in the uppermost groundwater-bearing unit is to the south ranging from 0.0031 to 0.00356 ft/ft as measured between wells MW-4 and RW-6.
- Analytical results reported for the groundwater samples collected from wells MW-1 through MW-7 and RW-4 through RW-7, indicated BTEX concentrations or concentrations below the MDLs or the NMOCD Remediation Criteria.
- Laboratory analysis of groundwater samples collected from recovery wells with observed PSH (RW-1 through RW-3 and RW-8) in 2019 indicated benzene concentrations ranging from below MDLs to 0.0624 mg/L. Benzene concentrations analyzed in the groundwater samples collected from RW-1, RW-2, and RW-8 were all above the NMOCD criteria of 0.01 mg/L. Analysis of all other BTEX constituents (i.e., toluene, ethylbenzene, and total xylenes) occurred concentrations below MDLs or levels below the NMOCD criteria.
- Weekly PSH recovery from wells RW-1, RW-2, RW-3, and RW-8 continued during 2019. The estimated quantity of PSH recovered from wells exhibiting PSH during weekly PSH recovery efforts totaled approximately 10-gallons, with affected groundwater recovery totaling approximately 210-gallons.
- PSH recovered by MDPE was calculated to be 29.82-gallons equivalent of PSH removed (11.82-gallons of vapor PSH and 18-gallons of fluid PSH).
- The PSH plume has remained in the historical source area, located in the vicinity of recovery wells RW-1 through RW-3 and RW-8, and does not appear to be migrating downgradient.

Based on PSH recovery data and groundwater sampling completed during 2019 (and previously) at the Site, EnTech recommends the following actions:

- PSH recovery from wells RW-1 through RW-3 and RW-8 continue on a weekly basis.
- Groundwater monitoring be conducted semi-annually on monitor wells MW-1, MW-2, RW-5 and RW-6.
- An annual groundwater sampling event on all wells at the Site.
- Groundwater samples will be analyzed for PAH from wells exhibiting NMOCD exceedances of benzene.

FIGURES



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

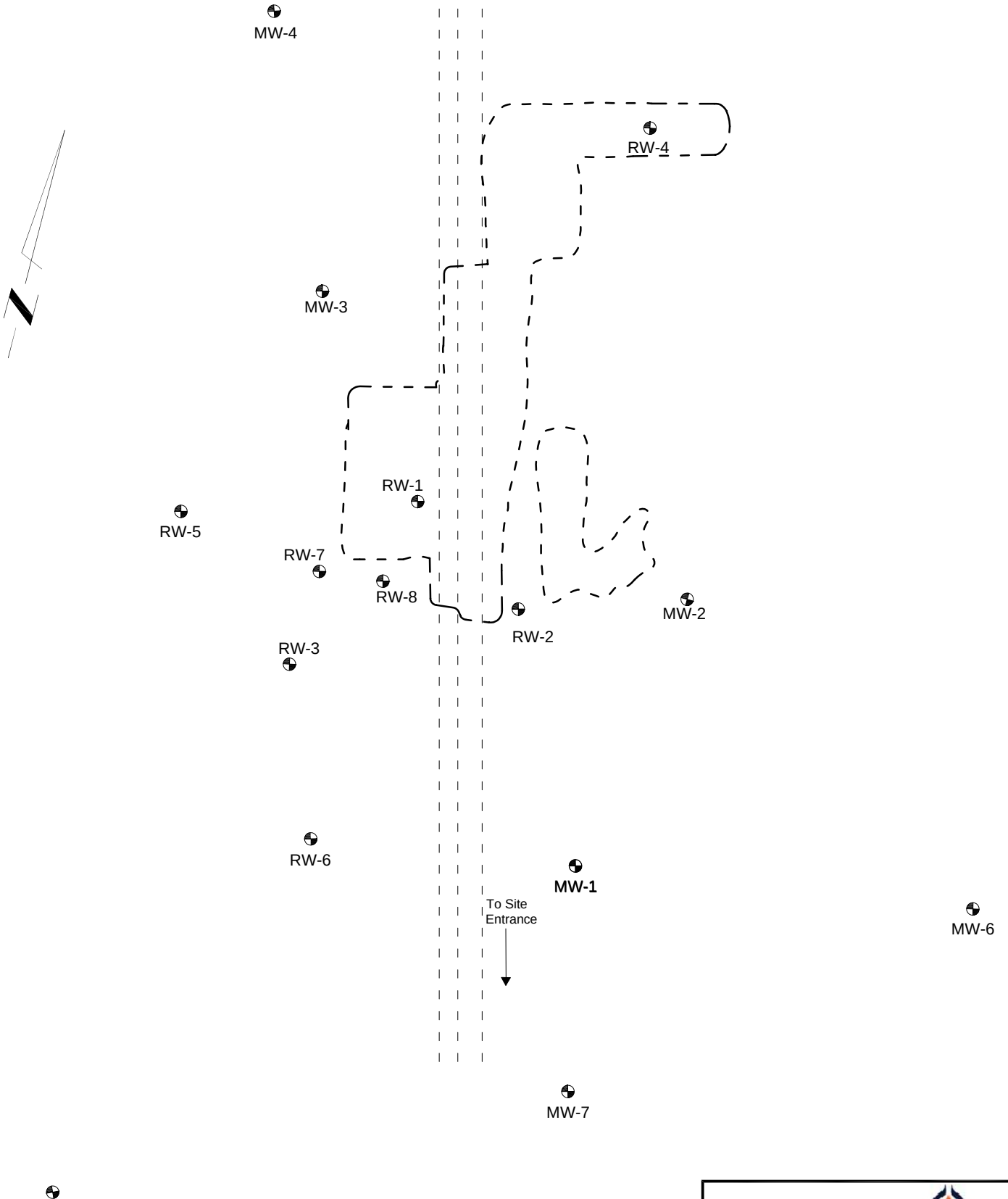
1/2 1/4 0 1/4 1/2

Distance in Miles

EnTech
Houston, TX • (281) 362-2714

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

PROJ. NO: PAA12015	DATE: 2/19



LEGEND:

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

0 60

FEET

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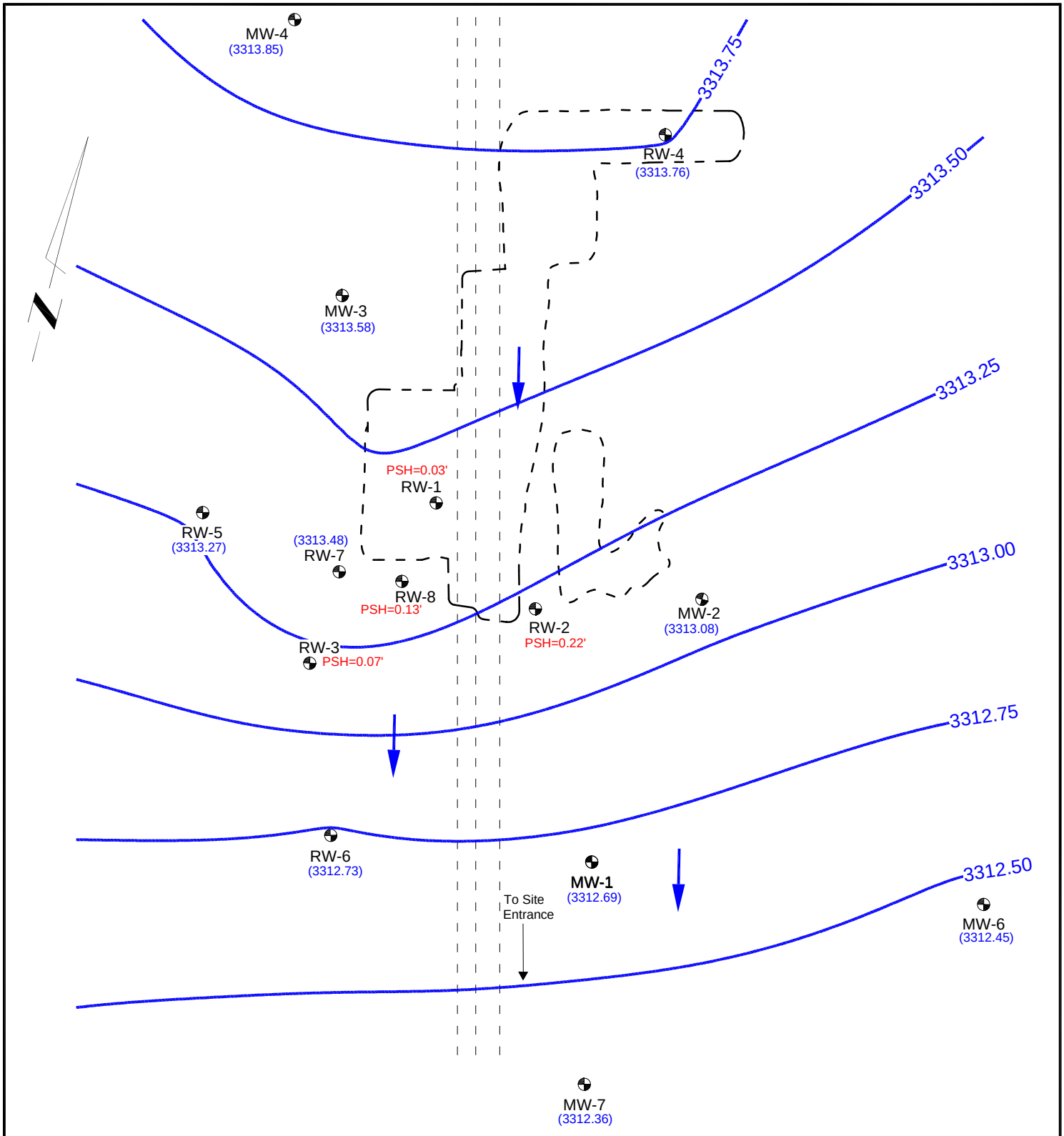
Figure 2
Site Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015	DATE: 2/19



MW-5
(3312.27)

LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- – – – - Buried Pipeline
- 3312.5 - Groundwater Elevation Contour, ft. Contour Interval = 0.25'
- (3311.73) - Corrected Groundwater Elevation, ft.
- ← - Grounwater Flow Direction

PSH - Phase Separated Hydrocarbons
Wells with PSH not used to calculated gradient.

0 60
FEET

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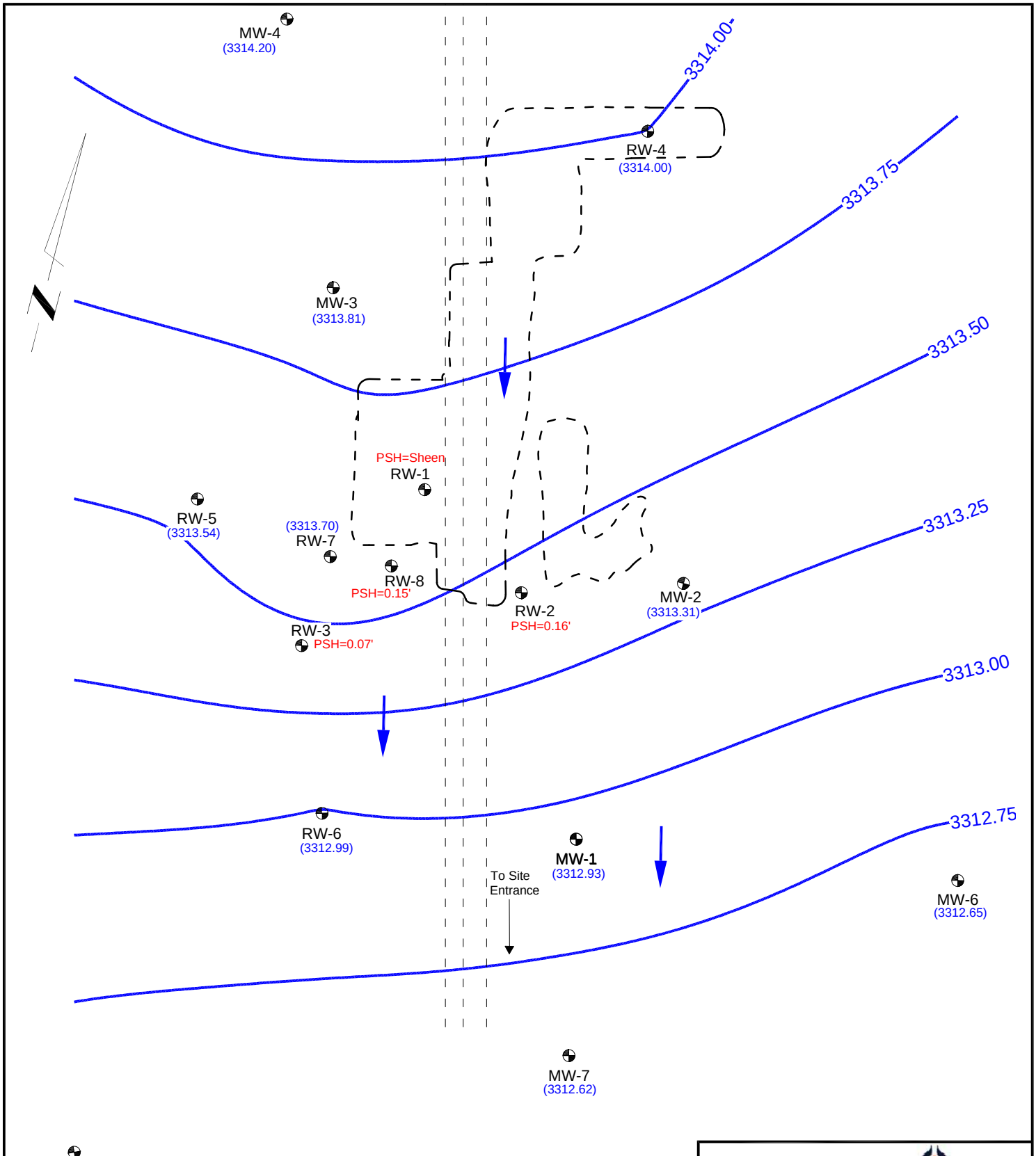
Figure 3A
1st Quarter 2019 - Groundwater Gradient Map
February 12, 2019
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/20



LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- – – – - Buried Pipeline
- 3312.5 - Groundwater Elevation Contour, ft. Contour Interval = 0.25'
- (3311.73) - Corrected Groundwater Elevation, ft.
- ← - Grounwater Flow Direction

PSH - Phase Separated Hydrocarbons
Wells with PSH not used to calculated gradient.

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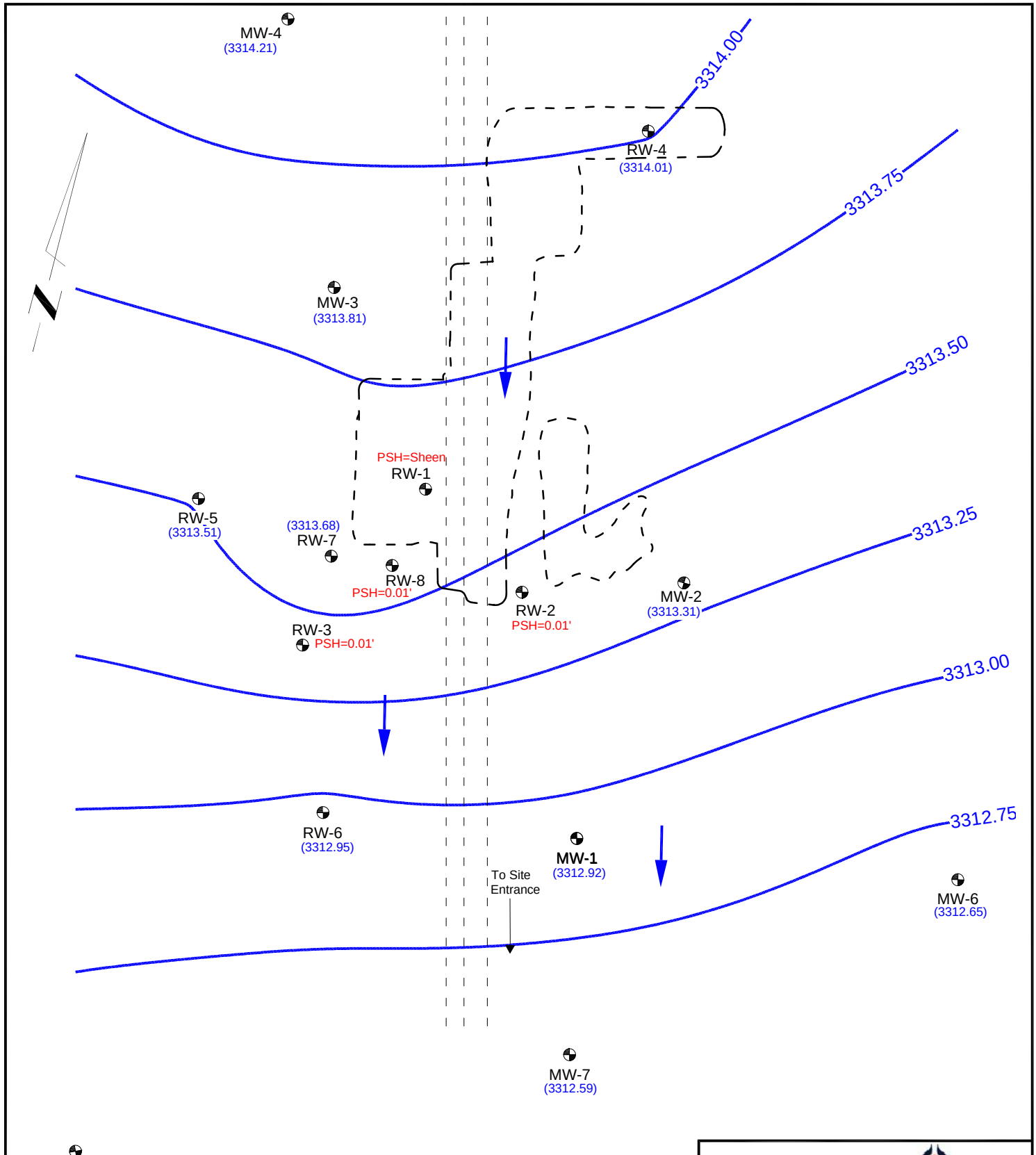
Figure 3B
2nd Quarter 2019 - Groundwater Gradient Map
May 8, 2019
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/20



LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- – – – - Buried Pipeline
- 3312.5 - Groundwater Elevation Contour, ft. Contour Interval = 0.25'
- (3311.73) - Corrected Groundwater Elevation, ft.
- ← - Grounwater Flow Direction

PSH - Phase Separated Hydrocarbons
Wells with PSH not used to calculated gradient.

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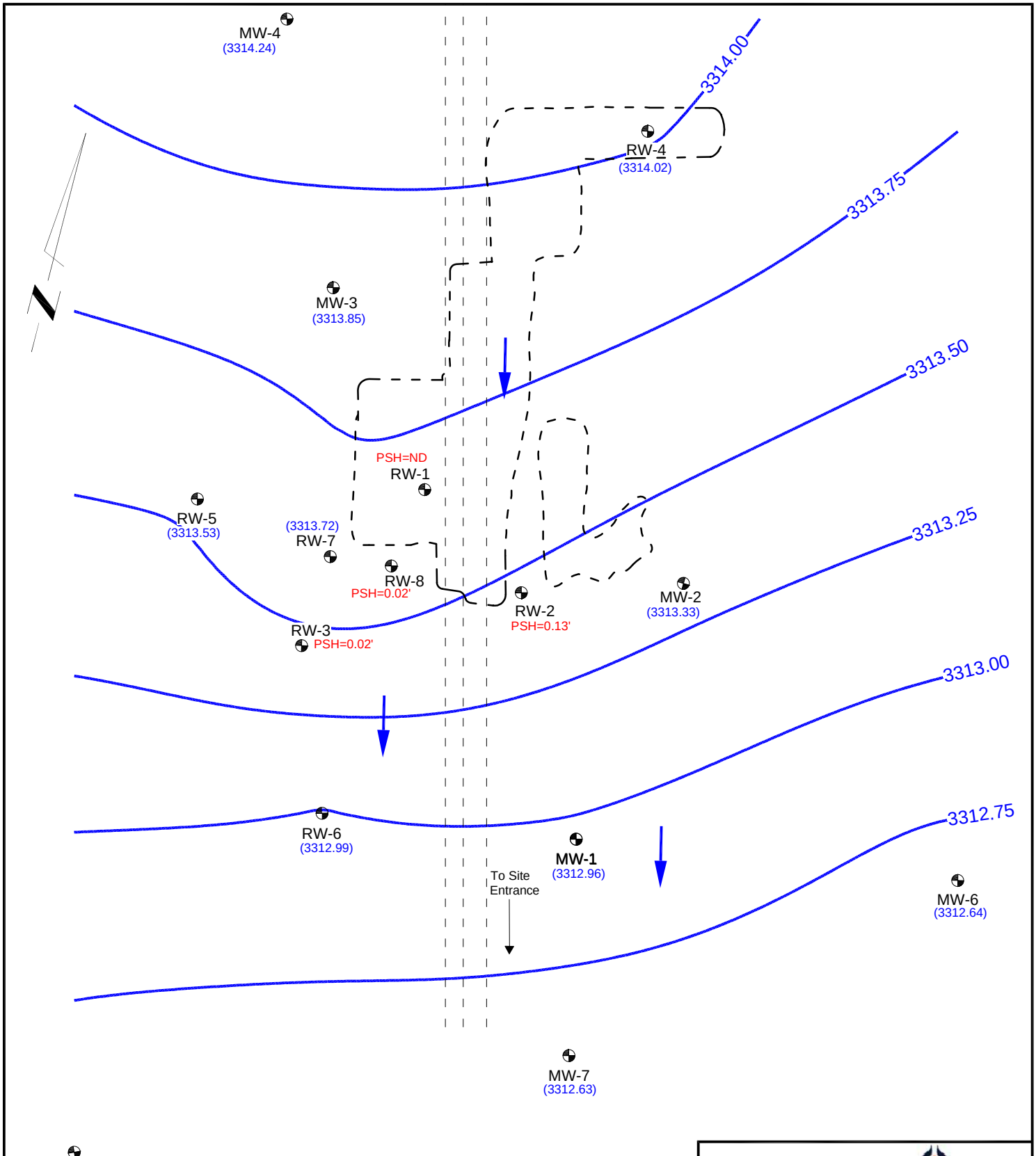
Figure 3C
3rd Quarter 2019 - Groundwater Gradient Map
August 21, 2019
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/20



LEGEND:

- MW - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- – – – - Buried Pipeline
- 3312.5 - Groundwater Elevation Contour, ft. Contour Interval = 0.25'
- (3311.73) - Corrected Groundwater Elevation, ft.
- ← - Grounwater Flow Direction

PSH - Phase Separated Hydrocarbons
Wells with PSH not used to calculated gradient.

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Figure 3D
4th Quarter 2019 - Groundwater Gradient Map
November 5, 2019
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/20

MW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	02/12/19	<0.001	<0.001	<0.001	<0.003

RW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-4	02/12/19	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	02/12/19	<0.001	<0.001	<0.001	<0.003

MW-3

NS
RW-1

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-5	02/12/19	<0.001	<0.001	<0.001	<0.003

RW-5

RW-7

RW-8
NS

RW-2
NS

MW-2

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-7	02/12/19	0.00105	<0.001	0.00771	<0.003

NS
RW-3

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	02/12/19	<0.001	<0.001	<0.001	<0.003

RW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-6	02/12/19	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-1	02/12/19	<0.001	<0.001	<0.001	<0.003

MW-1

To Site Entrance

MW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	02/12/19	<0.001	<0.001	<0.001	<0.003

MW-7

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	02/12/19	<0.001	<0.001	<0.001	<0.003

MW-5

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	02/12/19	<0.001	<0.001	<0.001	<0.003

LEGEND:

- **MW** - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- – – - Buried Pipeline

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

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

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Figure 4A
1st Quarter 2019 Groundwater Analytical Map
February 12, 2019
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/20

MW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	05/08/19	<0.001	0.00479	<0.001	<0.003

RW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-4	05/08/19	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	05/08/19	<0.001	<0.001	<0.001	<0.003

MW-3

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-1	05/08/19	**0.0110**	<0.005	0.109	0.162

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-8	05/08/19	**0.0624**	0.00759	0.126	0.247

RW-1

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-5	05/08/19	<0.001	<0.001	<0.001	<0.003

RW-5

RW-7

RW-8

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	05/08/19	<0.001	0.00488	<0.001	<0.003

MW-2

RW-2

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-7	05/08/19	<0.001	<0.001	0.00363	<0.003

RW-3

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-2	05/08/19	**0.0438**	0.0380	0.174	0.441

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-3	05/08/19	<0.005	0.00685	0.142	0.373

RW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-6	05/08/19	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-1	05/08/19	<0.001	0.00486	<0.001	<0.003

MW-1

To Site Entrance

MW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	05/08/19	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	05/08/19	<0.001	0.00461	<0.001	<0.003

MW-7

LEGEND:

- **MW** - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- – – – - Buried Pipeline

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

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

MW-5

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	05/08/19	<0.001	<0.001	<0.001	<0.003

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Figure 4B
2nd Quarter 2019 Groundwater Analytical Map
May 8, 2019
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/20

MW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	08/22/19	<0.001	<0.001	<0.001	<0.003

RW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-4	08/22/19	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	08/22/19	<0.001	<0.001	<0.001	<0.003

MW-3

NS
RW-1

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-5	08/22/19	<0.001	<0.001	<0.001	<0.003

RW-5

RW-7

RW-8
NS

RW-2
NS

MW-2

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	08/22/19	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-7	08/22/19	<0.001	<0.001	0.00122	<0.003

NS
RW-3

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-6	08/22/19	<0.001	<0.001	<0.001	<0.003

RW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-1	08/22/19	<0.001	<0.001	<0.001	<0.003

MW-1

To Site Entrance

MW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	08/22/19	<0.001	<0.001	<0.001	<0.003

MW-7

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	08/22/19	<0.001	<0.001	<0.001	<0.003

MW-5

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	08/22/19	<0.001	<0.001	<0.001	<0.003

LEGEND:

- **MW** - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- – – - Buried Pipeline

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

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

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Figure 4C
3rd Quarter 2019 Groundwater Analytical Map
August 22, 2019
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/20

MW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-4	11/06/19	<0.001	<0.001	<0.001	<0.003

RW-4

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-4	11/06/19	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-3	11/06/19	<0.001	<0.001	<0.001	<0.003

MW-3

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-1	11/06/19	<0.005	<0.005	0.0245	0.0928

RW-1

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-5	11/06/19	<0.001	<0.001	<0.001	<0.003

RW-5

RW-7

RW-8
NS

RW-2
NS

MW-2

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-2	11/06/19	<0.001	<0.001	<0.001	<0.003

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-7	11/06/19	<0.001	<0.001	<0.001	<0.003

NS
RW-3

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-1	11/06/19	<0.001	<0.001	<0.001	<0.003

MW-1

RW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
RW-6	11/06/19	<0.001	<0.001	<0.001	<0.003

To Site Entrance

MW-6

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-6	11/06/19	<0.001	<0.001	<0.001	<0.003

MW-7

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-7	11/06/19	<0.001	<0.001	<0.001	<0.003

MW-5

Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
MW-5	11/06/19	<0.001	<0.001	<0.001	<0.003

LEGEND:

- **MW** - Monitoring or Recovery Well Location
- ---- - Excavation Extent
- – – – Buried Pipeline

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

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

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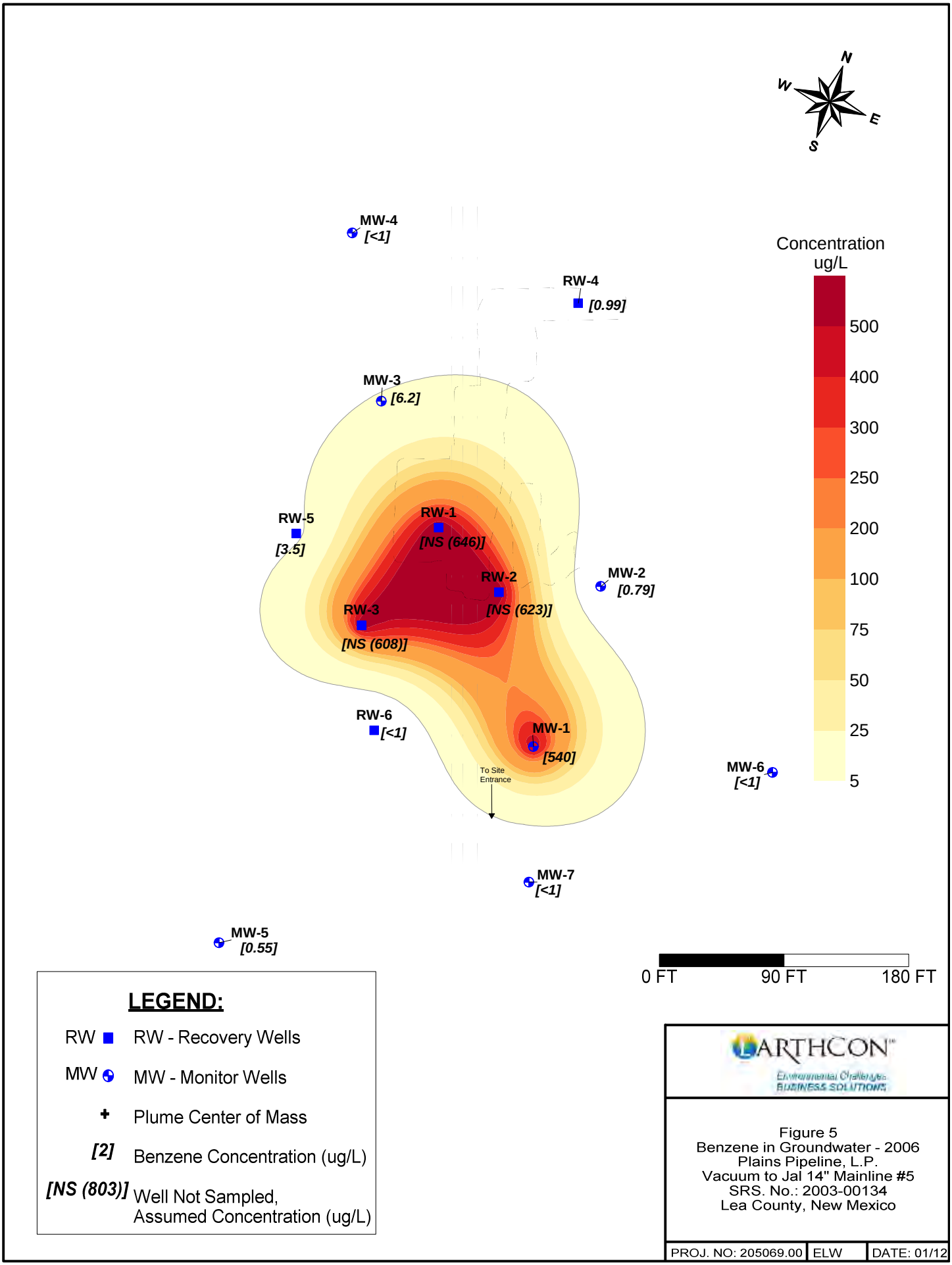
Figure 4D
4th Quarter 2019 Groundwater Analytical Map
November 6, 2019
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/20

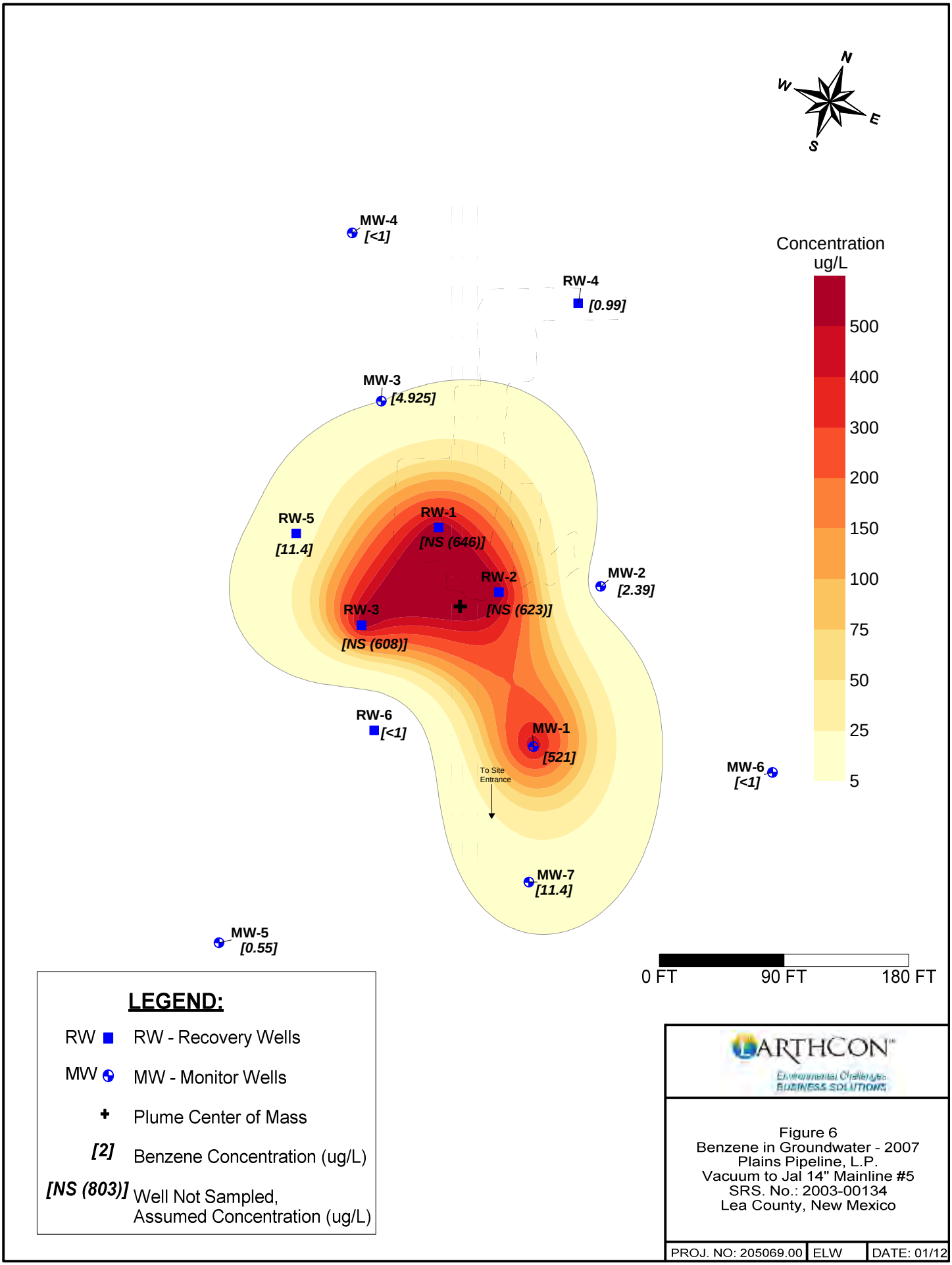


LEGEND:

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

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

PROJ. NO: 205069.00	ELW	DATE: 01/12



LEGEND:

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

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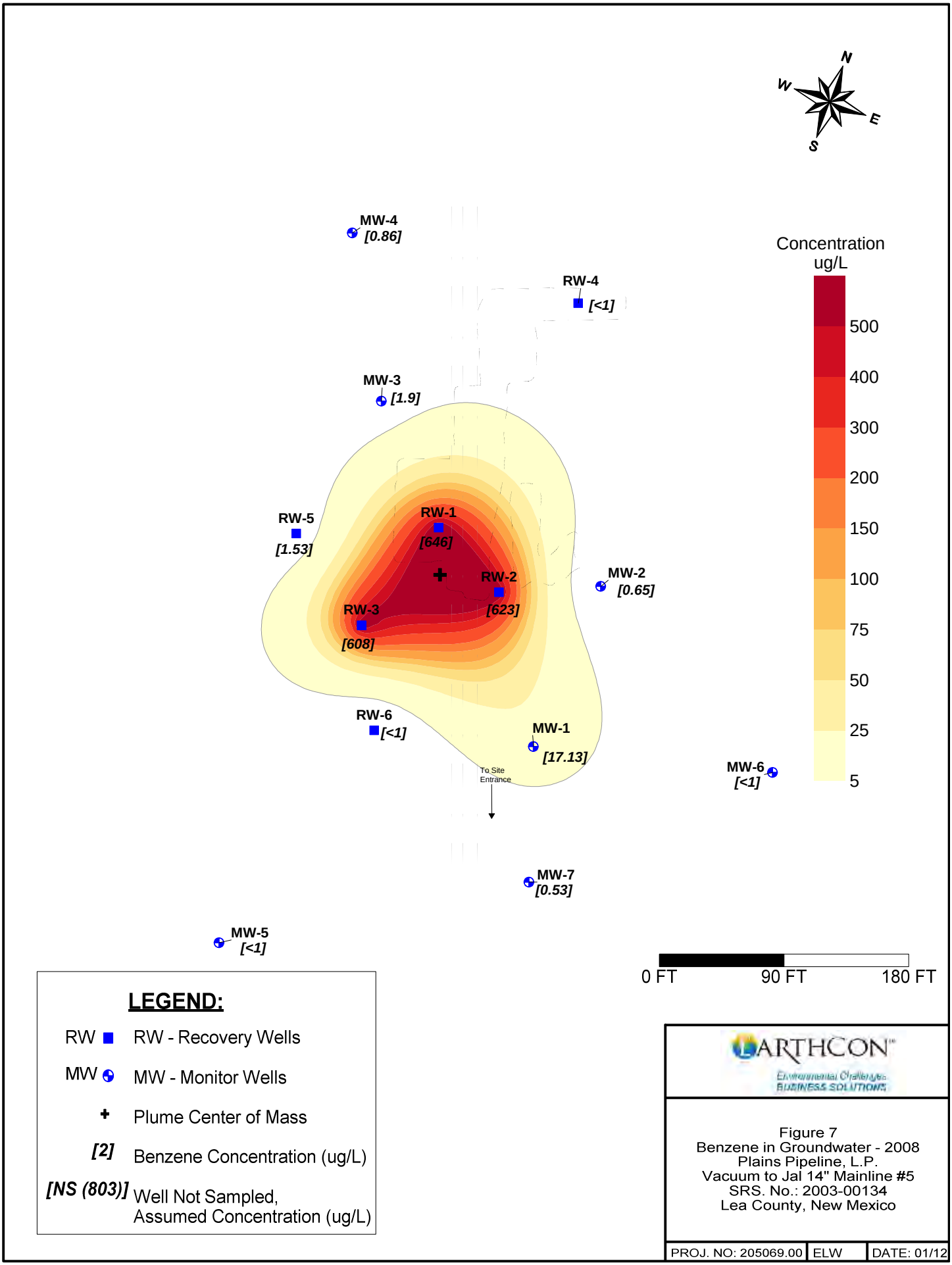
Figure 6
Benzene in Groundwater - 2007
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico

PROJ. NO: 205069.00	ELW	DATE: 01/12



LEGEND:

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

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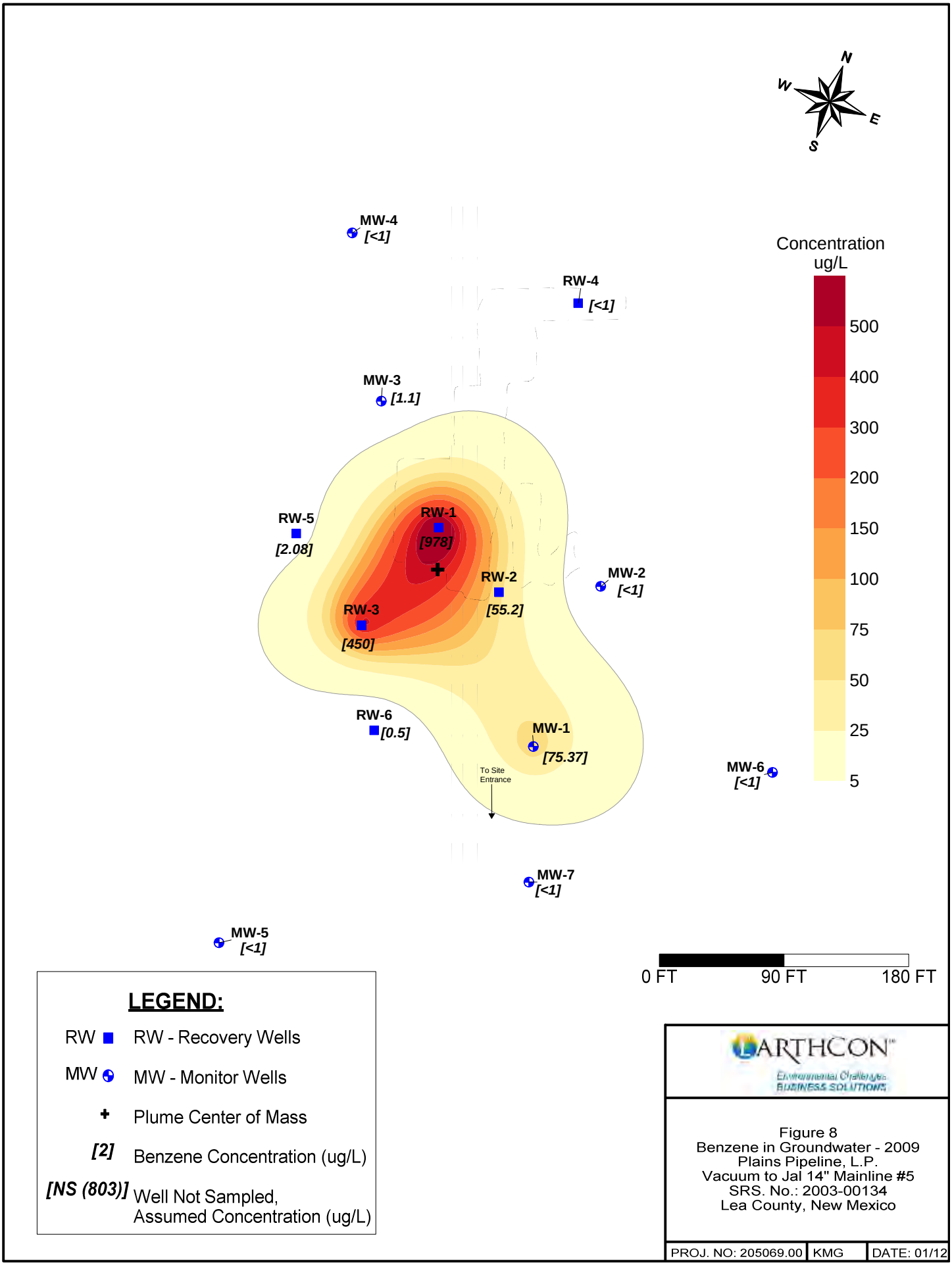
Figure 7
Benzene in Groundwater - 2008
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico

PROJ. NO: 205069.00	ELW	DATE: 01/12



LEGEND:

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

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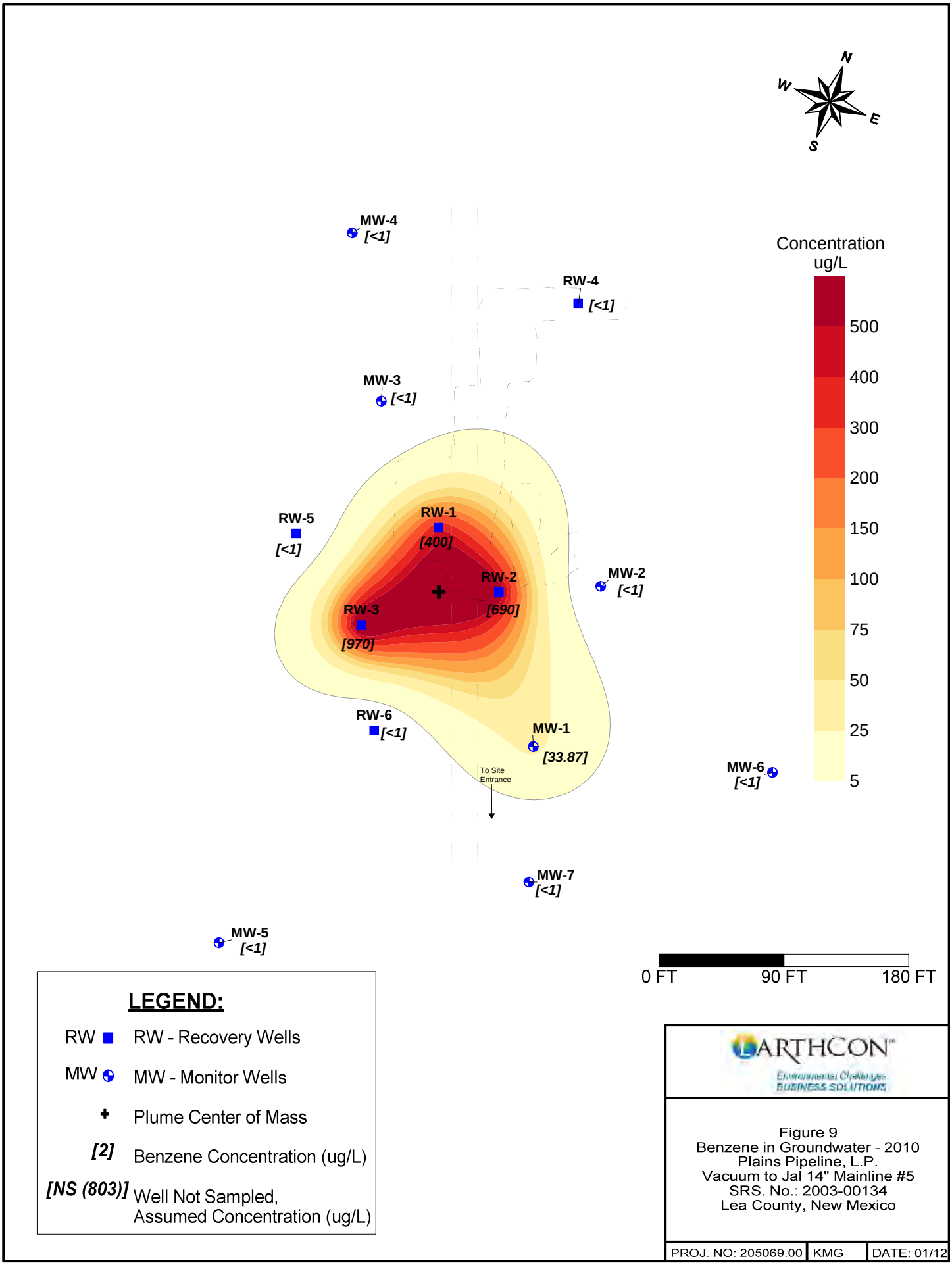
Figure 8
Benzene in Groundwater - 2009
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico

PROJ. NO: 205069.00	KMG	DATE: 01/12



LEGEND:

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

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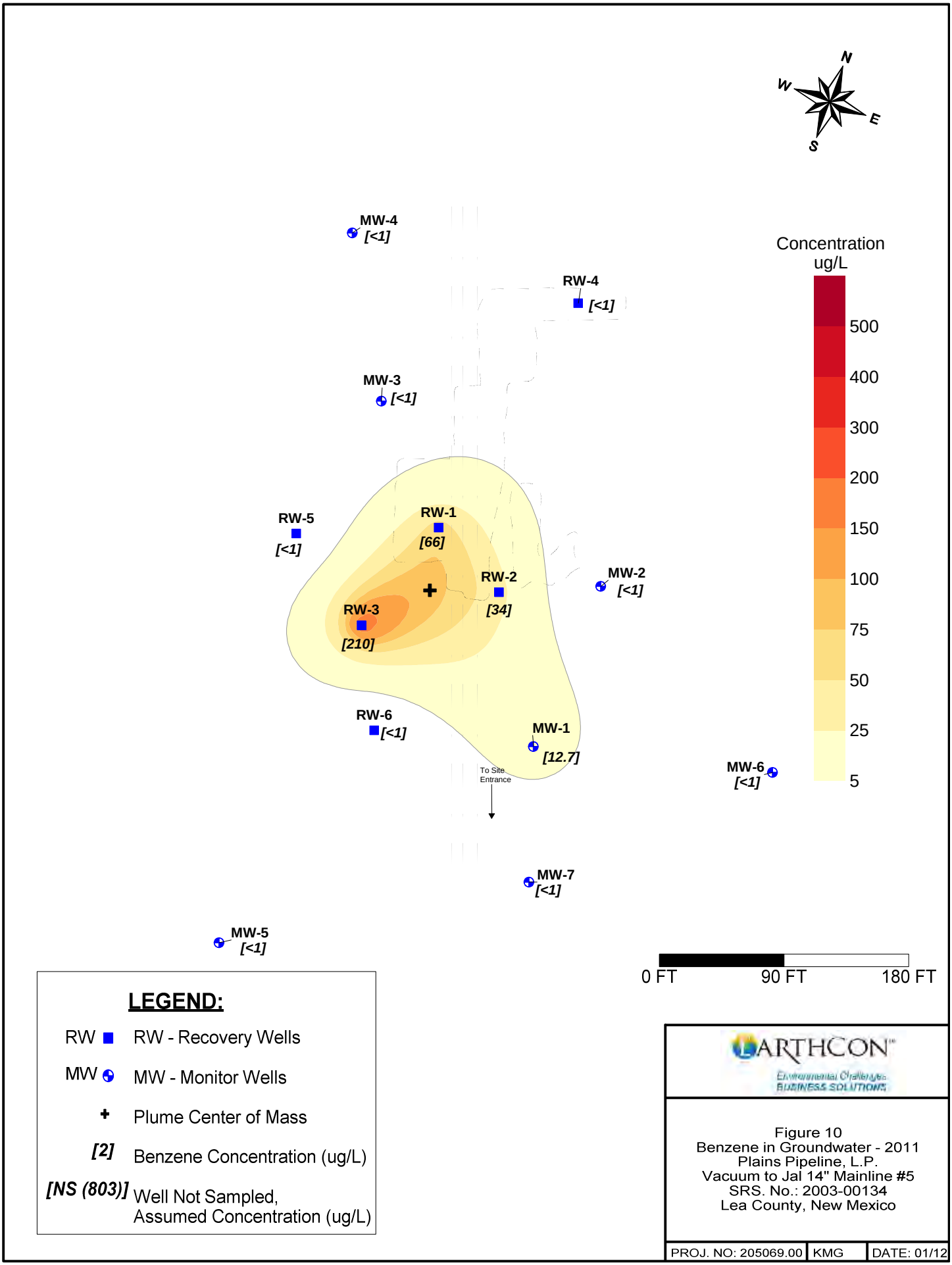
Figure 9
Benzene in Groundwater - 2010
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico

PROJ. NO: 205069.00	KMG	DATE: 01/12



LEGEND:

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

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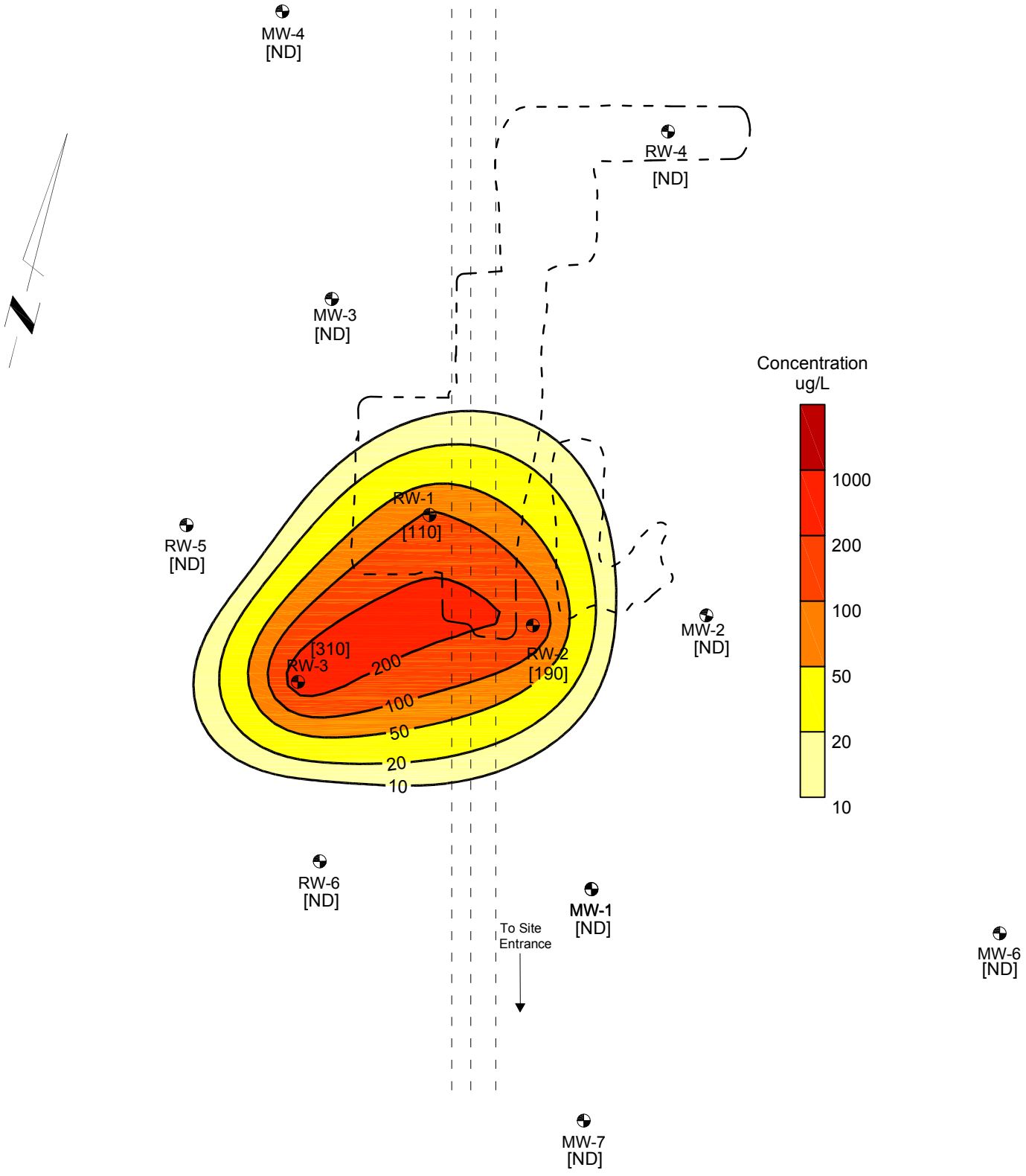
Figure 10
Benzene in Groundwater - 2011
Plains Pipeline, L.P.
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Lea County, New Mexico

PROJ. NO: 205069.00	KMG	DATE: 01/12



LEGEND:

- MW - Monitoring or Recovery Well Location
- [550] - Benzene Concentration in ug/L
- ND - Not Detected

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 during 2012. The only exception is the concentrations reported in groundwater sample collected from RW-1 through RW-3. This wells were only sampled during the 2nd Quarter 2012.

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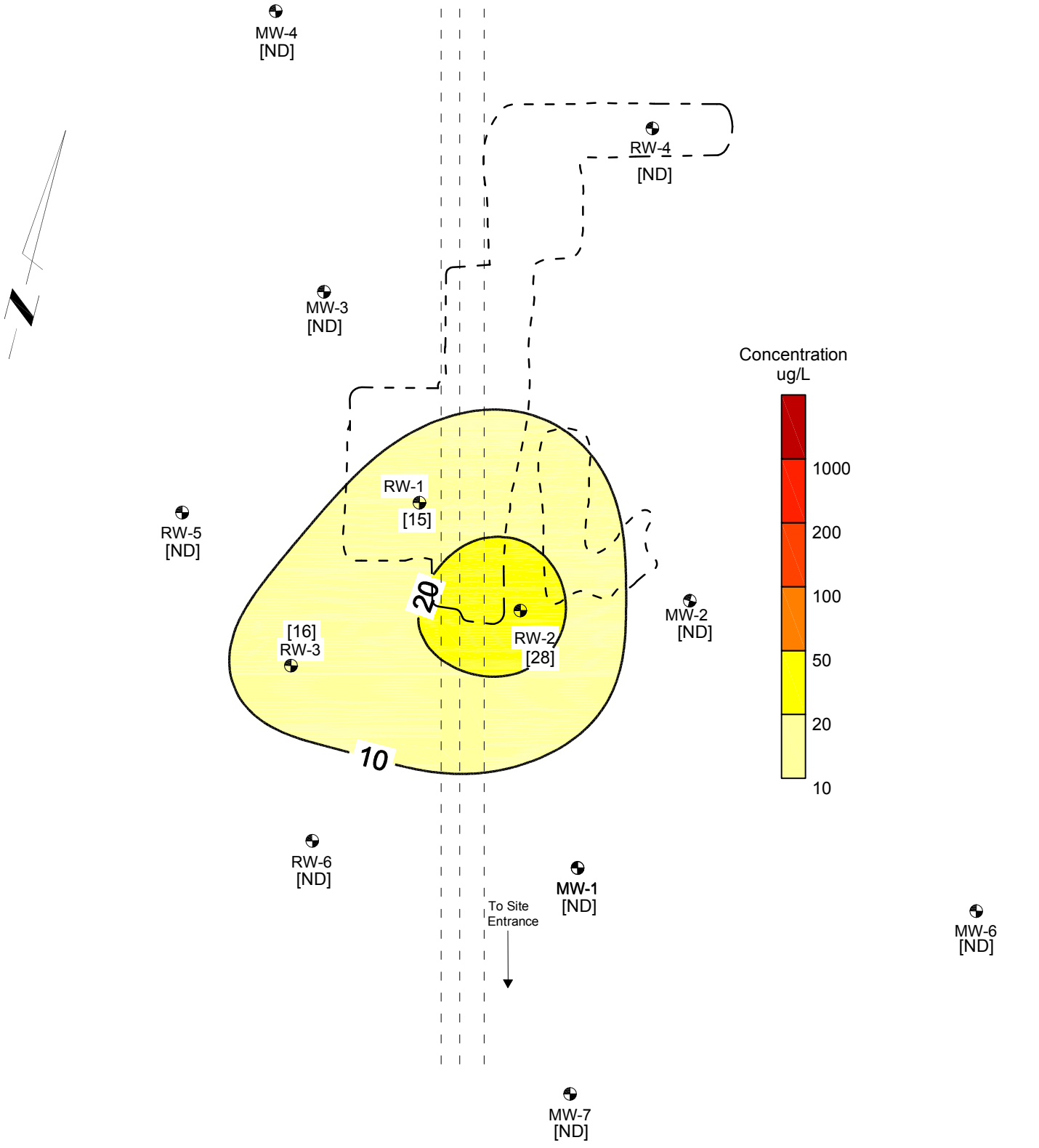
Figure 11
2012 - Benzene Isopleth Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 3/13



LEGEND:

- MW - Monitoring or Recovery Well Location
- [550] - Benzene Concentration in ug/L
- ND - Not Detected

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 during 2013. The only exception is the concentrations reported in groundwater sample collected from RW-1 through RW-3. These wells were only sampled during the 2nd Quarter 2013.

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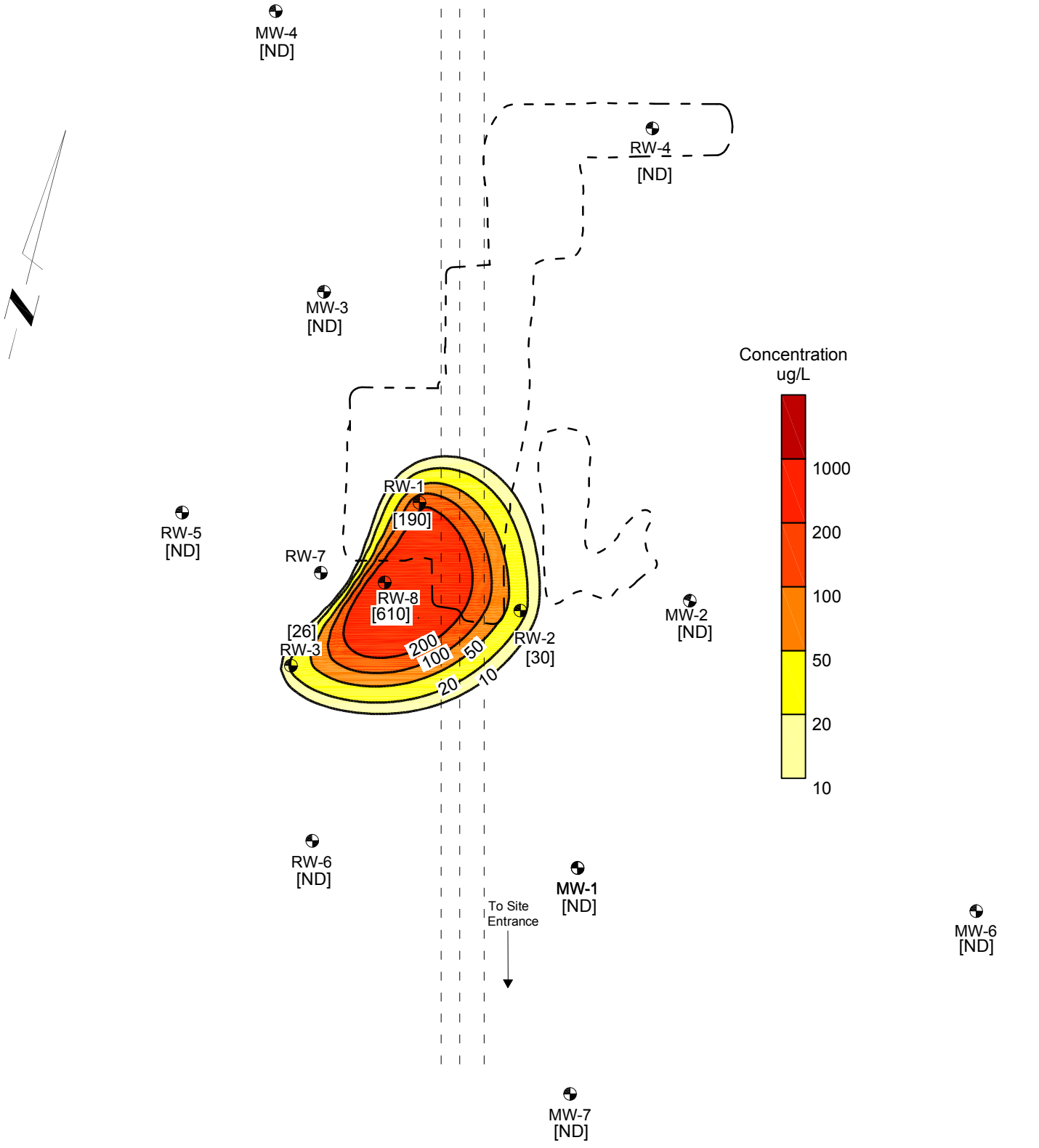
Figure 12
2013 - Benzene Isopleth Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/14



LEGEND:

MW	- Monitoring or Recovery Well Location
[550]	- Benzene Concentration in ug/L
ND	- Not Detected

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 during 2014. The only exception is the concentrations reported in groundwater sample collected from RW-1 through RW-3, & RW-8. These wells were only sampled during the 2nd Quarter 2014.

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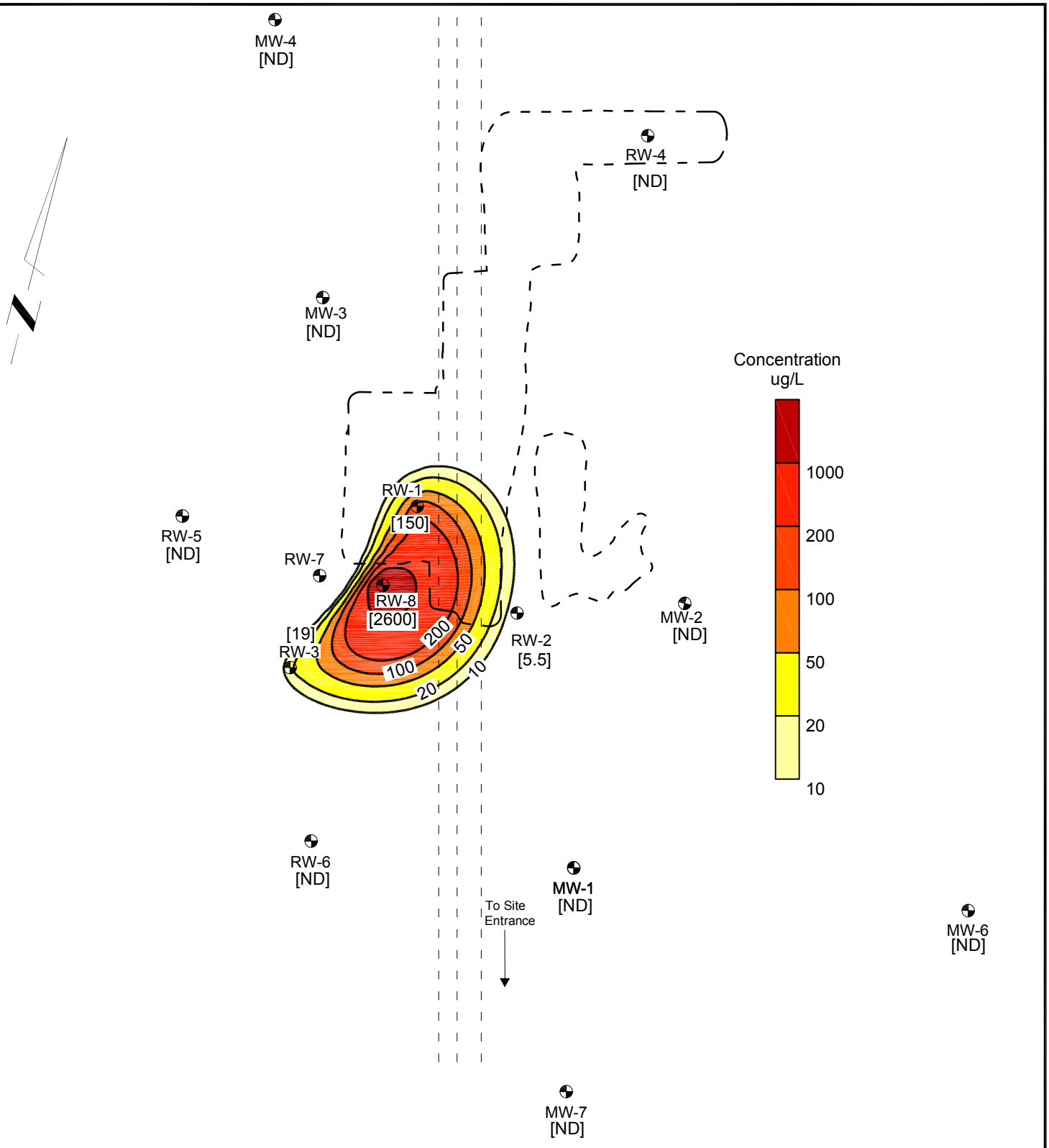
Figure 13
2014 - Benzene Isopleth Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/15



LEGEND:

MW	- Monitoring or Recovery Well Location
[550]	- Benzene Concentration in ug/L
ND	- Not Detected

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 during 2015. The only exception is the concentrations reported in groundwater sample collected from RW-1 through RW-3, & RW-8. These wells were only sampled during the 2nd Quarter 2015.

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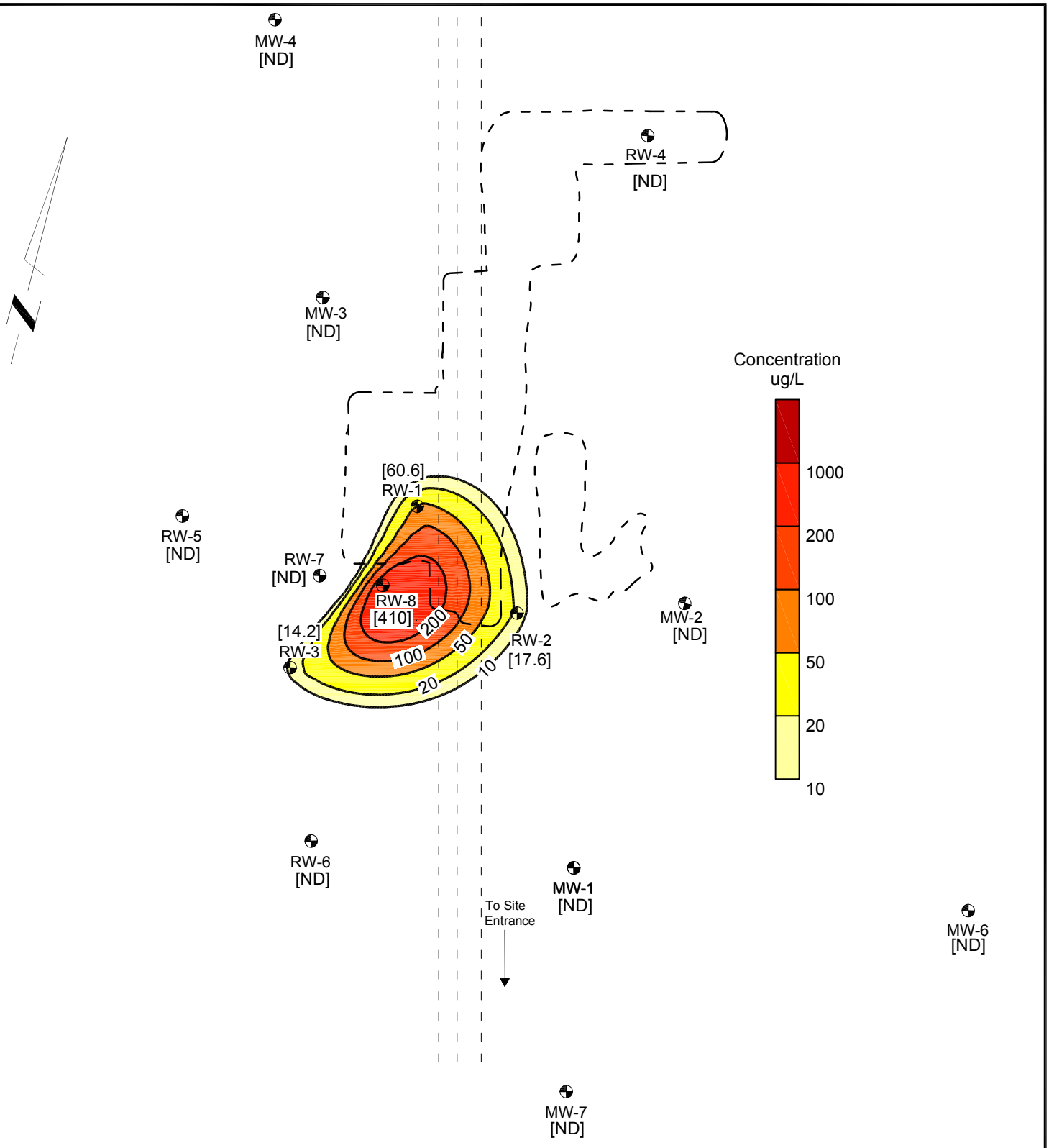
Figure 14
2015 - Benzene Isopleth Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 1/16



LEGEND:

MW	- Monitoring or Recovery Well Location
[550]	- Benzene Concentration in ug/L
ND	- Not Detected

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 during 2016. The only exception is the concentrations reported in groundwater sample collected from RW-1 through RW-3, & RW-8. These wells were only sampled during the 2nd Quarter 2016.

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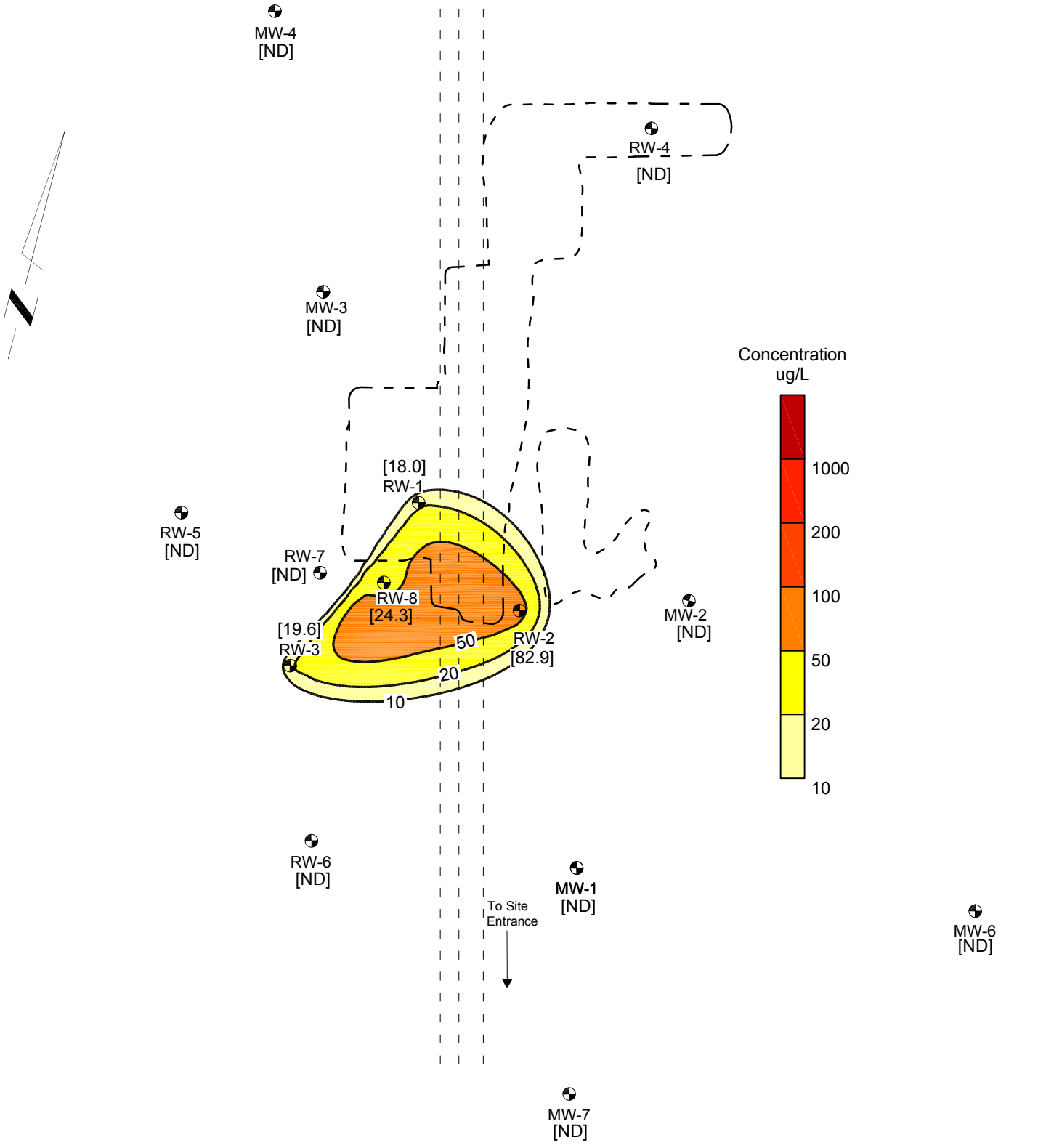
Figure 15
2016 - Benzene Isopleth Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 1/17



LEGEND:

MW	- Monitoring or Recovery Well Location
[550]	- Benzene Concentration in ug/L
ND	- Not Detected

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 during 2017. The only exception is the concentrations reported in groundwater sample collected from RW-1 through RW-3, & RW-8. These wells were only sampled during the 2nd Quarter 2017.

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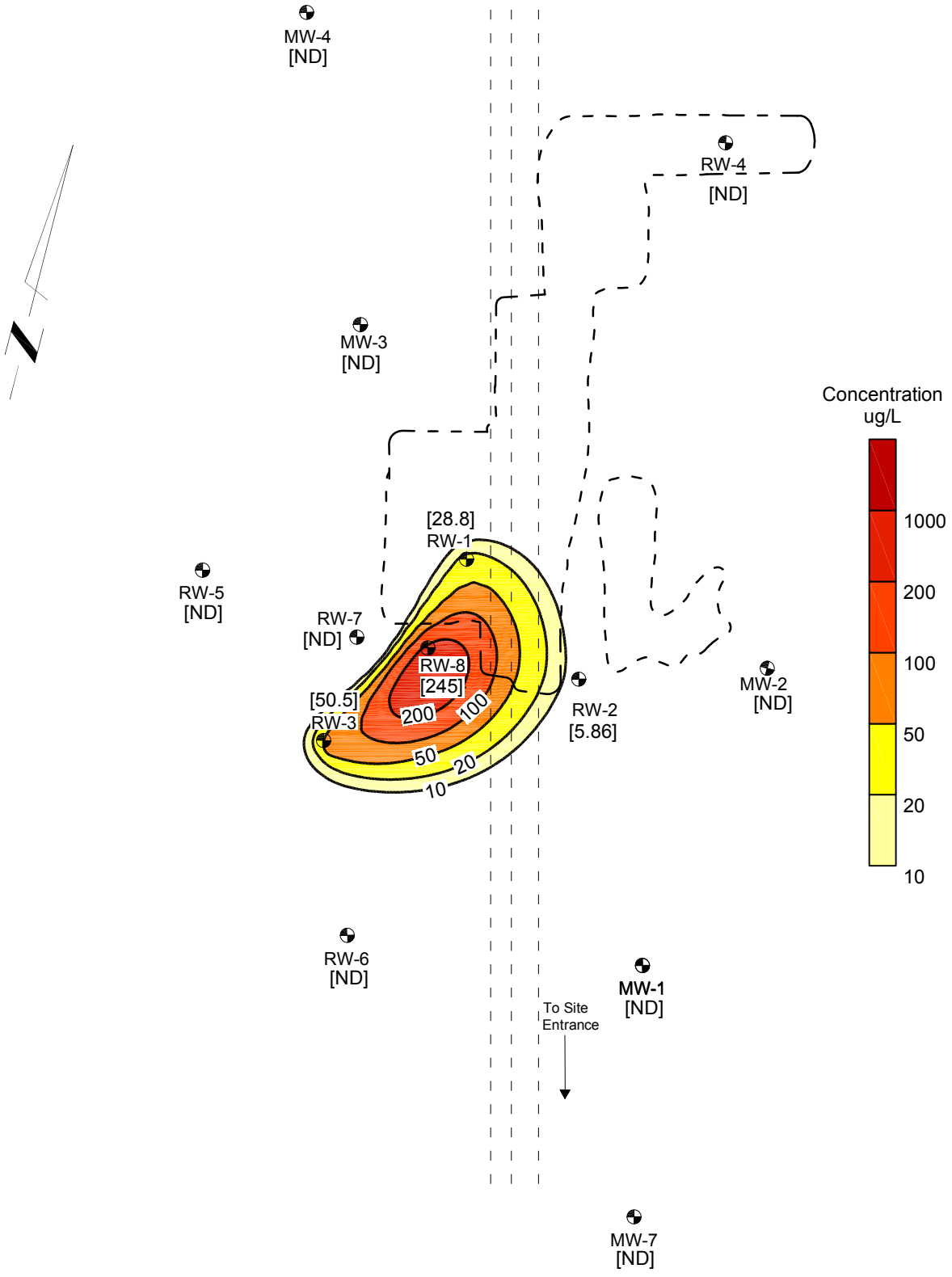
Figure 16
2017 - Benzene Isopleth Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 1/18



LEGEND:

MW	- Monitoring or Recovery Well Location
[550]	- Benzene Concentration in ug/L
ND	- Not Detected

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 during 2018. The only exception is the concentrations reported in groundwater sample collected from RW-1 through RW-3, & RW-8. These wells were only sampled during the 2nd Quarter 2018.

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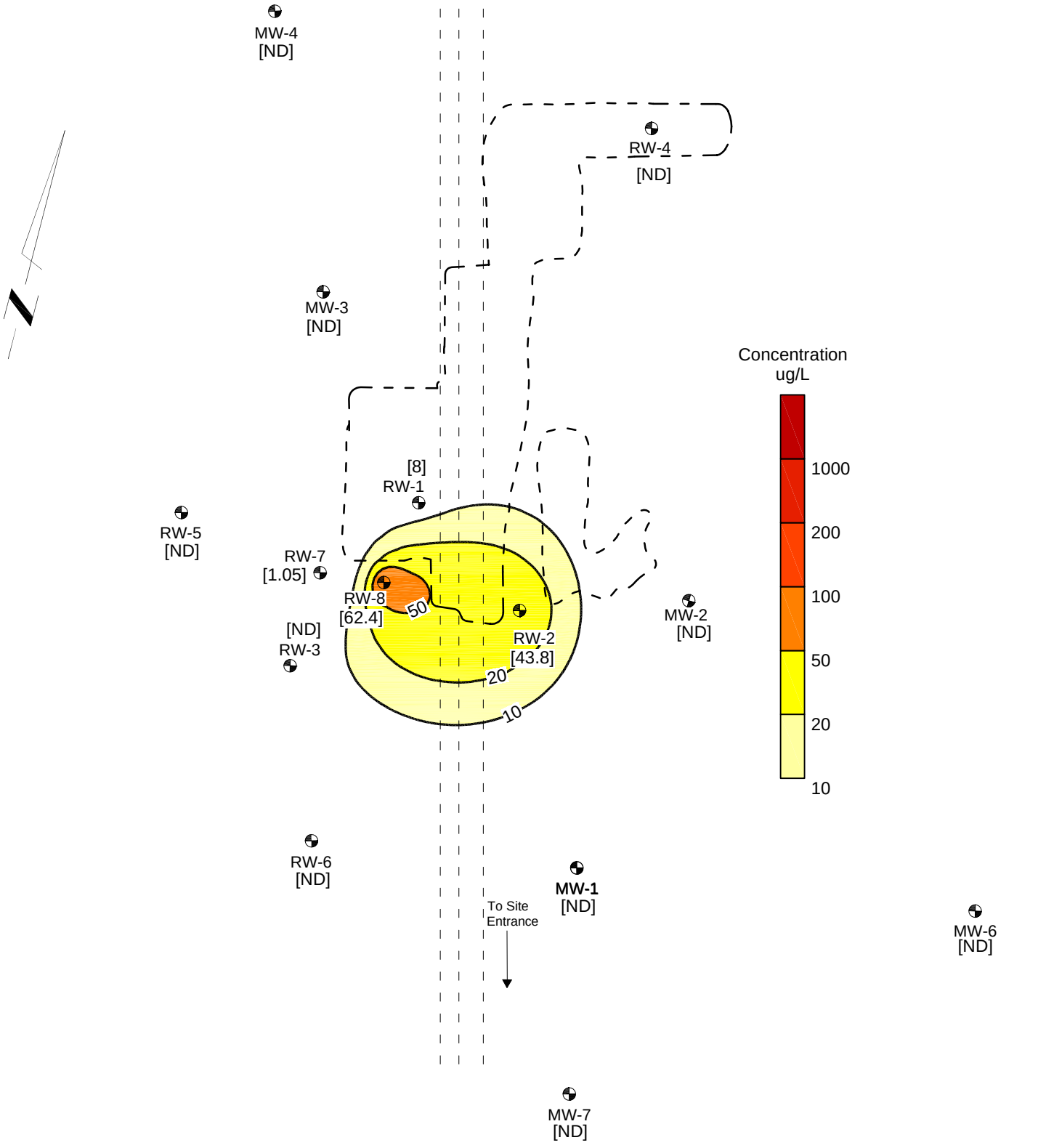
Figure 17
2018 - Benzene Isopleth Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/19



LEGEND:

MW	- Monitoring or Recovery Well Location
[550]	- Benzene Concentration in ug/L
ND	- Not Detected

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 during 2019.

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Figure 18
2019 - Benzene Isopleth Map
Vacuum to Jal 14" Mainline #5
SRS. No.: 2003-00134
Plains Pipeline, L.P.
Lea County, New Mexico

PROJ. NO: PAA12015 | DATE: 2/20

TABLES

TABLE 1
2019 Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Date Measured	Top of Casing Elevation (ft MSL)	Total Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	PSH Thickness (ft)	Recovery Method	Recovery		Corrected Groundwater Elevation (ft MSL)	Comments
								PSH	H_2O		
MW-1	02/12/19	3363.04	63.78	ND	50.35	ND	NA	NA	NA	3312.69	Sampled
MW-1	05/08/19	3363.04	63.78	ND	50.11	ND	NA	NA	NA	3312.93	Sampled
MW-1	08/21/19	3363.04	63.78	ND	50.12	ND	NA	NA	NA	3312.92	Sampled
MW-1	11/05/19	3363.04	63.78	ND	50.08	ND	NA	NA	NA	3312.96	Sampled
MW-2	02/12/19	3362.11	64.10	ND	49.03	ND	NA	NA	NA	3313.08	Sampled
MW-2	05/08/19	3362.11	64.10	ND	48.80	ND	NA	NA	NA	3313.31	Sampled
MW-2	08/21/19	3362.11	64.10	ND	48.80	ND	NA	NA	NA	3313.31	Sampled
MW-2	11/05/19	3362.11	64.10	ND	48.78	ND	NA	NA	NA	3313.33	Sampled
MW-3	02/12/19	3362.13	64.72	ND	48.55	ND	NA	NA	NA	3313.58	Sampled
MW-3	05/08/19	3362.13	64.72	ND	48.32	ND	NA	NA	NA	3313.81	Sampled
MW-3	08/21/19	3362.13	64.72	ND	48.32	ND	NA	NA	NA	3313.81	Sampled
MW-3	11/05/19	3362.13	64.72	ND	48.28	ND	NA	NA	NA	3313.85	Sampled
MW-4	02/12/19	3362.49	63.48	ND	48.64	ND	NA	NA	NA	3313.85	Sampled
MW-4	05/08/19	3362.49	63.48	ND	48.29	ND	NA	NA	NA	3314.20	Sampled
MW-4	08/21/19	3362.49	63.48	ND	48.28	ND	NA	NA	NA	3314.21	Sampled
MW-4	11/05/19	3362.49	63.48	ND	48.25	ND	NA	NA	NA	3314.24	Sampled
MW-5	02/12/19	3363.67	63.81	ND	51.40	ND	NA	NA	NA	3312.27	Sampled
MW-5	05/08/19	3363.67	63.81	ND	51.12	ND	NA	NA	NA	3312.55	Sampled
MW-5	08/21/19	3363.67	63.81	ND	51.16	ND	NA	NA	NA	3312.51	Sampled
MW-5	11/05/19	3363.67	63.81	ND	51.12	ND	NA	NA	NA	3312.55	Sampled
MW-6	02/12/19	3362.6	63.50	ND	50.15	ND	NA	NA	NA	3312.45	Sampled
MW-6	05/08/19	3362.6	63.50	ND	49.95	ND	NA	NA	NA	3312.65	Sampled
MW-6	08/21/19	3362.6	63.50	ND	49.95	ND	NA	NA	NA	3312.65	Sampled
MW-6	11/05/19	3362.6	63.50	ND	49.96	ND	NA	NA	NA	3312.64	Sampled
MW-7	02/12/19	3362.75	63.75	ND	50.39	ND	NA	NA	NA	3312.36	Sampled
MW-7	05/08/19	3362.75	63.75	ND	50.13	ND	NA	NA	NA	3312.62	Sampled
MW-7	08/21/19	3362.75	63.75	ND	50.16	ND	NA	NA	NA	3312.59	Sampled
MW-7	11/05/19	3362.75	63.75	ND	50.12	ND	NA	NA	NA	3312.63	Sampled
RW-1	02/12/19	3362.10	60.80	49.05	49.08	0.03	NA	Sheen	10.00	3313.05	
RW-1	05/08/19	3362.10	60.80	Sheen	49.28	Sheen	NA	Sheen	10.00	3312.82	Sampled
RW-1	08/21/19	3362.10	60.80	Sheen	48.81	Sheen	NA	Sheen	10.00	3313.29	
RW-1	11/05/19	3362.10	61.65	ND	48.78	ND	NA	Sheen	10.00	3313.32	
RW-2	02/12/19	3362.00	63.40	49.18	49.40	0.22	NA	0.25	9.75	3312.79	
RW-2	05/08/19	3362.00	63.40	48.95	49.11	0.16	NA	0.25	9.75	3313.03	Sampled
RW-2	08/21/19	3362.00	63.40	48.98	48.99	0.01	NA	Sheen	10.00	3313.02	
RW-2	11/05/19	3362.00	63.40	48.91	49.04	0.13	NA	0.25	9.75	3313.07	
RW-3	02/12/19	3361.93	63.80	49.72	49.79	0.07	NA	0.25	9.75	3312.20	
RW-3	05/08/19	3361.93	63.80	49.47	49.54	0.07	NA	0.25	9.75	3312.45	Sampled
RW-3	08/21/19	3361.93	63.80	49.48	49.49	0.01	NA	0.25	9.75	3312.45	
RW-3	11/05/19	3361.93	63.80	49.45	49.47	0.02	NA	0.25	9.75	3312.48	

TABLE 1
2019 Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Date Measured	Top of Casing Elevation (ft MSL)	Total Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	PSH Thickness (ft)	Recovery Method	Recovery		Corrected Groundwater Elevation (ft MSL)	Comments
								PSH	H_2O		
RW-4	02/12/19	3363.22	63.65	ND	49.46	ND	NA	NA	NA	3313.76	Sampled
RW-4	05/08/19	3363.22	63.65	ND	49.22	ND	NA	NA	NA	3314.00	Sampled
RW-4	08/21/19	3363.22	63.65	ND	49.21	ND	NA	NA	NA	3314.01	Sampled
RW-4	11/05/19	3363.22	63.65	ND	49.20	ND	NA	NA	NA	3314.02	Sampled
RW-5	02/12/19	3362.38	64.07	ND	49.11	ND	NA	NA	NA	3313.27	Sampled
RW-5	05/08/19	3362.38	64.07	ND	48.84	ND	NA	NA	NA	3313.54	Sampled
RW-5	08/21/19	3362.38	64.07	ND	48.87	ND	NA	NA	NA	3313.51	Sampled
RW-5	11/05/19	3362.38	64.07	ND	48.85	ND	NA	NA	NA	3313.53	Sampled
RW-6	02/12/19	3363.11	64.27	ND	50.38	ND	NA	NA	NA	3312.73	Sampled
RW-6	05/08/19	3363.11	64.27	ND	50.12	ND	NA	NA	NA	3312.99	Sampled
RW-6	08/21/19	3363.11	64.27	ND	50.16	ND	NA	NA	NA	3312.95	Sampled
RW-6	11/05/19	3363.11	64.27	ND	50.12	ND	NA	NA	NA	3312.99	Sampled
RW-7	02/12/19	3362.52	68.56	ND	49.04	ND	NA	NA	NA	3313.48	Sampled
RW-7	05/08/19	3362.52	68.56	ND	48.82	ND	NA	NA	NA	3313.70	Sampled
RW-7	08/21/19	3362.52	68.56	ND	48.84	ND	NA	NA	NA	3313.68	Sampled
RW-7	11/05/19	3362.52	68.56	ND	48.80	ND	NA	NA	NA	3313.72	Sampled
RW-8	02/12/19	3362.52	68.34	49.68	49.81	0.13	NA	2.00	23.00	3312.82	
RW-8	05/08/19	3362.52	68.34	49.46	49.61	0.15	NA	0.50	36.50	3313.04	Sampled
RW-8	08/21/19	3362.52	68.34	49.49	49.50	0.01	NA	2.00	23.00	3313.03	
RW-8	11/05/19	3362.52	68.34	49.42	49.44	0.02	NA	2.00	23.00	3313.10	

NA: Not applicable
ND: Not detected
ft - feet
MSL - mean sea level

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
MW-1	03/06/18	3363.04	63.78	ND	50.68	ND	NA	NA	NA	3312.36	Sampled
MW-1	06/12/18	3363.04	63.78	ND	50.54	ND	NA	NA	NA	3312.50	Sampled
MW-1	09/05/18	3363.04	63.78	ND	50.53	ND	NA	NA	NA	3312.51	Sampled
MW-1	11/27/18	3363.04	63.78	ND	50.41	ND	NA	NA	NA	3312.63	Sampled
MW-1	02/12/19	3363.04	63.78	ND	50.35	ND	NA	NA	NA	3312.69	Sampled
MW-1	05/08/19	3363.04	63.78	ND	50.11	ND	NA	NA	NA	3312.93	Sampled
MW-1	08/21/19	3363.04	63.78	ND	50.12	ND	NA	NA	NA	3312.92	Sampled
MW-1	11/05/19	3363.04	63.78	ND	50.08	ND	NA	NA	NA	3312.96	Sampled
MW-2	03/06/18	3362.11	64.10	ND	49.40	ND	NA	NA	NA	3312.71	Sampled
MW-2	06/12/18	3362.11	64.10	ND	49.26	ND	NA	NA	NA	3312.85	Sampled
MW-2	09/05/18	3362.11	64.10	ND	49.22	ND	NA	NA	NA	3312.89	Sampled
MW-2	11/27/18	3362.11	64.10	ND	49.26	ND	NA	NA	NA	3312.85	Sampled
MW-2	02/12/19	3362.11	64.10	ND	49.03	ND	NA	NA	NA	3313.08	Sampled
MW-2	05/08/19	3362.11	64.10	ND	48.80	ND	NA	NA	NA	3313.31	Sampled
MW-2	08/21/19	3362.11	64.10	ND	48.80	ND	NA	NA	NA	3313.31	Sampled
MW-2	11/05/19	3362.11	64.10	ND	48.78	ND	NA	NA	NA	3313.33	Sampled
MW-3	03/06/18	3362.13	64.72	ND	48.94	ND	NA	NA	NA	3313.19	Sampled
MW-3	06/12/18	3362.13	64.72	ND	48.78	ND	NA	NA	NA	3313.35	Sampled
MW-3	09/05/18	3362.13	64.72	ND	48.75	ND	NA	NA	NA	3313.38	Sampled
MW-3	11/27/18	3362.13	64.72	ND	48.64	ND	NA	NA	NA	3313.49	Sampled
MW-3	02/12/19	3362.13	64.72	ND	48.55	ND	NA	NA	NA	3313.58	Sampled
MW-3	05/08/19	3362.13	64.72	ND	48.32	ND	NA	NA	NA	3313.81	Sampled
MW-3	08/21/19	3362.13	64.72	ND	48.32	ND	NA	NA	NA	3313.81	Sampled
MW-3	11/05/19	3362.13	64.72	ND	48.28	ND	NA	NA	NA	3313.85	Sampled
MW-4	03/06/18	3362.49	63.48	ND	48.92	ND	NA	NA	NA	3313.57	Sampled
MW-4	06/12/18	3362.49	63.48	ND	48.74	ND	NA	NA	NA	3313.75	Sampled
MW-4	09/05/18	3362.49	63.48	ND	48.71	ND	NA	NA	NA	3313.78	Sampled
MW-4	11/27/18	3362.49	63.48	ND	48.60	ND	NA	NA	NA	3313.89	Sampled
MW-4	02/12/19	3362.49	63.48	ND	48.64	ND	NA	NA	NA	3313.85	Sampled
MW-4	05/08/19	3362.49	63.48	ND	48.29	ND	NA	NA	NA	3314.20	Sampled
MW-4	08/21/19	3362.49	63.48	ND	48.28	ND	NA	NA	NA	3314.21	Sampled
MW-4	11/05/19	3362.49	63.48	ND	48.25	ND	NA	NA	NA	3314.24	Sampled
MW-5	03/06/18	3363.67	63.81	ND	51.70	ND	NA	NA	NA	3311.97	Sampled
MW-5	06/12/18	3363.67	63.81	ND	51.58	ND	NA	NA	NA	3312.09	Sampled
MW-5	09/05/18	3363.67	63.81	ND	51.56	ND	NA	NA	NA	3312.11	Sampled
MW-5	11/27/18	3363.67	63.81	ND	51.47	ND	NA	NA	NA	3312.20	Sampled

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
MW-5	02/13/19	3363.67	63.81	ND	51.40	ND	NA	NA	NA	3312.27	Sampled
MW-5	05/08/19	3363.67	63.81	ND	51.12	ND	NA	NA	NA	3312.55	Sampled
MW-5	08/21/19	3363.67	63.81	ND	51.16	ND	NA	NA	NA	3312.51	Sampled
MW-5	11/05/19	3363.67	63.81	ND	51.12	ND	NA	NA	NA	3312.55	Sampled
MW-6	03/06/18	3362.6	63.50	ND	50.54	ND	NA	NA	NA	3312.06	Sampled
MW-6	06/12/18	3362.6	63.50	ND	50.41	ND	NA	NA	NA	3312.19	Sampled
MW-6	09/05/18	3362.6	63.50	ND	50.39	ND	NA	NA	NA	3312.21	Sampled
MW-6	11/27/18	3362.6	63.50	ND	50.22	ND	NA	NA	NA	3312.38	Sampled
MW-6	02/12/19	3362.6	63.50	ND	50.15	ND	NA	NA	NA	3312.45	Sampled
MW-6	05/08/19	3362.6	63.50	ND	49.95	ND	NA	NA	NA	3312.65	Sampled
MW-6	08/21/19	3362.6	63.50	ND	49.95	ND	NA	NA	NA	3312.65	Sampled
MW-6	11/05/19	3362.6	63.50	ND	49.96	ND	NA	NA	NA	3312.64	Sampled
MW-7	03/06/18	3362.75	63.75	ND	50.71	ND	NA	NA	NA	3312.04	Sampled
MW-7	06/12/18	3362.75	63.75	ND	50.58	ND	NA	NA	NA	3312.17	
MW-7	09/05/18	3362.75	63.75	ND	50.58	ND	NA	NA	NA	3312.17	Sampled
MW-7	11/27/18	3362.75	63.75	ND	50.45	ND	NA	NA	NA	3312.30	Sampled
MW-7	02/12/19	3362.75	63.75	ND	50.39	ND	NA	NA	NA	3312.36	Sampled
MW-7	05/08/19	3362.75	63.75	ND	50.13	ND	NA	NA	NA	3312.62	Sampled
MW-7	08/21/19	3362.75	63.75	ND	50.16	ND	NA	NA	NA	3312.59	Sampled
MW-7	11/05/19	3362.75	63.75	ND	50.12	ND	NA	NA	NA	3312.63	Sampled
RW-1	01/03/18	3362.10	60.80	49.50	49.58	0.08	NA	sheen	10.00	3312.59	
RW-1	01/10/18	3362.10	60.80	49.45	49.50	0.05	NA	sheen	10.00	3312.64	
RW-1	01/17/18	3362.10	60.80	49.51	49.54	0.03	NA	sheen	10.00	3312.59	
RW-1	01/25/18	3362.10	60.80	49.39	49.46	0.07	NA	sheen	10.00	3312.70	
RW-1	02/01/18	3362.10	60.80	50.50	50.60	0.10	NA	sheen	10.00	3311.59	
RW-1	02/14/18	3362.10	60.80	49.33	49.37	0.04	NA	sheen	10.00	3312.76	
RW-1	02/21/18	3362.10	60.80	49.38	49.41	0.03	NA	sheen	10.00	3312.72	
RW-1	02/28/18	3362.10	60.80	49.22	49.36	0.14	NA	sheen	10.00	3312.86	
RW-1	03/06/18	3362.10	60.80	49.31	49.34	0.03	NA	NA	NA	3312.79	
RW-1	03/15/18	3362.10	60.80	49.31	49.44	0.13	NA	sheen	10.00	3312.77	
RW-1	03/22/18	3362.10	60.80	49.36	49.44	0.08	NA	sheen	10.00	3312.73	
RW-1	03/28/18	3362.10	60.80	49.35	49.56	0.21	NA	0.25	9.75	3312.72	
RW-1	04/04/18	3362.10	60.80	49.37	49.56	0.19	NA	sheen	10.00	3312.70	
RW-1	04/11/18	3362.10	60.80	49.38	49.45	0.07	NA	sheen	10.00	3312.71	
RW-1	04/19/18	3362.10	60.80	49.41	49.47	0.06	NA	sheen	10.00	3312.68	
RW-1	04/24/18	3362.10	60.80	49.45	49.52	0.07	NA	sheen	10.00	3312.64	
RW-1	05/02/18	3362.10	60.80	49.27	49.30	0.03	NA	sheen	10.00	3312.83	

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
RW-1	05/09/18	3362.10	60.80	49.28	49.30	0.02	NA	sheen	10.00	3312.82	
RW-1	05/15/18	3362.10	60.80	49.26	49.29	0.03	NA	sheen	10.00	3312.84	
RW-1	05/22/18	3362.10	60.80	sheen	49.24	sheen	NA	NA	10.00	3312.86	
RW-1	05/30/18	3362.10	60.80	sheen	49.30	sheen	NA	NA	10.00	3312.80	
RW-1	06/12/18	3362.10	60.80	49.24	49.28	0.04	NA	sheen	10.00	3312.85	Sampled
RW-1	06/19/18	3362.10	60.80	49.25	49.28	0.03	NA	sheen	10.00	3312.85	
RW-1	06/29/18	3362.10	60.80	49.28	49.34	0.06	NA	sheen	10.00	3312.81	
RW-1	07/05/18	3362.10	60.80	49.25	49.28	0.03	NA	0.25	9.75	3312.85	
RW-1	07/11/18	3362.10	60.80	49.27	49.30	0.03	NA	0.25	9.75	3312.83	
RW-1	07/18/18	3362.10	60.80	49.18	49.25	0.07	NA	sheen	10.00	3312.91	
RW-1	07/26/18	3362.10	60.80	49.23	49.36	0.13	NA	sheen	10.00	3312.85	
RW-1	07/31/18	3362.10	60.80	49.20	49.30	0.10	NA	sheen	10.00	3312.89	
RW-1	08/07/18	3362.10	60.80	49.16	49.26	0.10	NA	sheen	10.00	3312.93	
RW-1	08/14/18	3362.10	60.80	49.20	49.26	0.06	NA	sheen	10.00	3312.89	
RW-1	08/21/18	3362.10	60.80	49.18	49.25	0.07	NA	sheen	10.00	3312.91	
RW-1	08/30/18	3362.10	60.80	49.24	49.29	0.05	NA	sheen	10.00	3312.85	
RW-1	09/05/18	3362.10	60.80	49.22	49.26	0.04	NA	Sheen	10.00	3312.87	
RW-1	09/18/18	3362.10	60.80	49.16	49.22	0.06	NA	Sheen	10.00	3312.93	
RW-1	09/26/18	3362.10	60.80	49.20	49.25	0.05	NA	Sheen	10.00	3312.89	
RW-1	10/03/18	3362.10	60.80	49.24	49.27	0.03	NA	Sheen	10.00	3312.86	
RW-1	10/11/18	3362.10	60.80	49.21	49.27	0.06	NA	Sheen	10.00	3312.88	
RW-1	10/17/18	3362.10	60.80	49.02	49.09	0.07	NA	Sheen	10.00	3313.07	
RW-1	10/24/18	3362.10	60.80	49.11	49.20	0.09	NA	Sheen	10.00	3312.98	
RW-1	10/31/18	3362.10	60.80	49.13	49.17	0.04	NA	Sheen	10.00	3312.96	
RW-1	11/06/18	3362.10	60.80	49.11	49.13	0.02	NA	Sheen	10.00	3312.99	
RW-1	11/13/18	3362.10	60.80	49.16	49.26	0.10	NA	Sheen	10.00	3312.93	
RW-1	11/21/18	3362.10	60.80	49.19	49.20	0.01	NA	Sheen	10.00	3312.91	
RW-1	11/27/18	3362.10	61.65	49.18	49.20	0.02	NA	Sheen	10.00	3312.92	
RW-1	12/07/18	3362.10	60.80	49.20	49.25	0.05	NA	Sheen	10.00	3312.89	
RW-1	12/12/18	3362.10	60.80	49.22	49.28	0.06	NA	Sheen	10.00	3312.87	
RW-1	12/18/18	3362.10	60.80	49.18	49.25	0.07	NA	Sheen	10.00	3312.91	
RW-1	01/03/19	3362.10	60.80	49.26	49.30	0.04	NA	sheen	10.00	3312.83	
RW-1	01/08/19	3362.10	60.80	49.31	49.36	0.05	NA	sheen	10.00	3312.78	
RW-1	01/29/19	3362.10	60.80	sheen	49.00	sheen	NA	sheen	10.00	3313.10	
RW-1	02/05/19	3362.10	60.80	sheen	49.10	sheen	NA	sheen	10.00	3313.00	
RW-1	02/12/19	3362.10	60.80	49.05	49.08	0.03	NA	sheen	10.00	3313.05	Sampled
RW-1	02/27/19	3362.10	60.80	49.11	49.14	0.03	NA	sheen	10.00	3312.99	
RW-1	03/06/19	3362.10	60.80	49.14	49.18	0.04	NA	sheen	10.00	3312.95	
RW-1	03/12/19	3362.10	60.80	49.16	49.21	0.05	NA	sheen	10.00	3312.93	
RW-1	03/21/19	3362.10	60.80	49.17	49.24	0.07	NA	sheen	10.00	3312.92	

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
RW-1	03/28/19	3362.10	60.80	49.21	49.25	0.04	NA	sheen	10.00	3312.88	
RW-1	04/02/19	3362.10	60.80	49.18	49.26	0.08	NA	sheen	10.00	3312.91	
RW-1	04/10/19	3362.10	60.80	49.14	49.20	0.06	NA	sheen	10.00	3312.95	
RW-1	04/16/19	3362.10	60.80	49.20	49.24	0.04	NA	sheen	10.00	3312.89	
RW-1	04/24/19	3362.10	60.80	49.24	49.29	0.05	NA	sheen	10.00	3312.85	
RW-1	05/01/19	3362.10	60.80	49.76	49.78	0.02	NA	sheen	10.00	3312.34	
RW-1	05/08/19	3362.10	60.80	sheen	48.81	sheen	NA	sheen	10.00	3313.29	
RW-1	05/17/19	3362.10	60.80	48.84	48.85	0.01	NA	Sheen	10.00	3313.26	
RW-1	05/24/19	3362.10	60.80	48.87	48.89	0.02	NA	Sheen	10.00	3313.23	
RW-1	06/05/19	3362.10	60.80	48.89	48.94	0.05	NA	Sheen	10.00	3313.20	
RW-1	06/14/19	3362.10	60.80	sheen	48.78	sheen	NA	NA	NA	3313.32	
RW-1	06/20/19	3362.10	60.80	48.91	48.97	0.06	NA	Sheen	10.00	3313.18	
RW-1	06/25/19	3362.10	60.80	sheen	48.79	sheen	NA	Sheen	10.00	3313.31	
RW-1	07/02/19	3362.10	60.80	48.80	48.81	0.01	NA	Sheen	10.00	3313.30	
RW-1	07/10/19	3362.10	60.80	sheen	48.82	sheen	NA	Sheen	10.00	3313.28	
RW-1	07/26/19	3362.10	60.80	48.86	48.88	0.02	NA	Sheen	10.00	3313.24	
RW-1	08/11/19	3362.10	60.80	48.83	48.91	0.08	NA	Sheen	10.00	3313.26	
RW-1	08/14/19	3362.10	60.80	sheen	48.81	sheen	NA	Sheen	10.00	3313.29	
RW-1	08/21/19	3362.10	61.65	sheen	48.81	sheen	NA	Sheen	10.00	3313.29	
RW-1	09/06/19	3362.10	60.80	sheen	48.82	sheen	NA	NA	NA	3313.28	
RW-1	09/12/19	3362.10	60.80	sheen	48.82	sheen	NA	NA	NA	3313.28	
RW-1	09/19/19	3362.10	60.80	sheen	48.76	sheen	NA	NA	NA	3313.34	
RW-1	09/26/19	3362.10	60.80	49.20	49.25	0.05	NA	sheen	10.00	3312.89	
RW-1	10/16/19	3362.10	60.80	sheen	48.82	sheen	NA	Sheen	10.00	3313.28	
RW-1	10/23/19	3362.10	60.80	sheen	48.78	sheen	NA	NA	NA	3313.32	
RW-1	10/31/19	3362.10	60.80	ND	48.82	ND	NA	NA	NA	3313.28	
RW-1	11/05/19	3362.10	60.80	ND	48.78	ND	NA	NA	NA	3313.32	
RW-1	11/14/19	3362.10	60.80	ND	48.81	ND	NA	NA	NA	3313.29	
RW-1	11/26/19	3362.10	60.80	ND	48.71	ND	NA	NA	NA	3313.39	
RW-1	12/03/19	3362.10	60.80	ND	48.74	ND	NA	NA	NA	3313.36	
RW-1	12/13/19	3362.10	60.80	ND	48.75	ND	NA	NA	NA	3313.35	
RW-1	12/20/19	3362.10	60.80	ND	48.74	ND	NA	Sheen	10.00	3313.36	
RW-1	12/26/19	3362.10	60.80	ND	48.72	ND	NA	Sheen	10.00	3313.38	
RW-2	01/03/18	3362.00	63.40	49.61	49.85	0.24	NA	0.25	9.75	3312.35	
RW-2	01/10/18	3362.00	63.40	49.54	49.80	0.26	NA	0.25	9.75	3312.42	
RW-2	01/17/18	3362.00	63.40	49.63	49.84	0.21	NA	1.50	8.50	3312.34	
RW-2	01/25/18	3362.00	63.40	49.50	49.66	0.16	NA	1.00	9.00	3312.48	
RW-2	02/01/18	3362.00	63.40	49.51	49.64	0.13	NA	1.00	9.00	3312.47	
RW-2	02/14/18	3362.00	63.40	49.48	49.58	0.10	NA	sheen	10.00	3312.51	

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
RW-2	02/21/18	3362.00	63.40	49.48	49.59	0.11	NA	sheen	10.00	3312.50	
RW-2	02/28/18	3362.00	63.40	49.41	49.62	0.21	NA	sheen	10.00	3312.56	
RW-2	03/06/18	3362.00	63.40	49.45	49.55	0.10	NA	NA	NA	3312.54	
RW-2	03/15/18	3362.00	63.40	49.42	49.57	0.15	NA	sheen	10.00	3312.56	
RW-2	03/22/18	3362.00	63.40	49.51	49.60	0.09	NA	sheen	10.00	3312.48	
RW-2	03/28/18	3362.00	63.40	49.49	49.79	0.30	NA	0.25	9.75	3312.47	
RW-2	04/04/18	3362.00	63.40	49.52	49.62	0.10	NA	sheen	10.00	3312.47	
RW-2	04/11/18	3362.00	63.40	49.50	49.59	0.09	NA	sheen	10.00	3312.49	
RW-2	04/19/18	3362.00	63.40	49.46	49.59	0.13	NA	sheen	10.00	3312.52	
RW-2	04/24/18	3362.00	63.40	49.51	49.60	0.09	NA	sheen	10.00	3312.48	
RW-2	05/02/18	3362.00	63.40	49.40	49.49	0.09	NA	sheen	10.00	3312.59	
RW-2	05/09/18	3362.00	63.40	49.43	49.50	0.07	NA	sheen	10.00	3312.56	
RW-2	05/15/18	3362.00	63.40	49.41	49.49	0.08	NA	sheen	10.00	3312.58	
RW-2	05/22/18	3362.00	63.40	49.39	49.47	0.08	NA	sheen	10.00	3312.60	
RW-2	05/30/18	3362.00	63.40	49.42	49.50	0.08	NA	sheen	10.00	3312.57	Sampled
RW-2	06/12/18	3362.00	63.40	49.39	49.60	0.21	NA	0.25	9.25	3312.58	
RW-2	06/19/18	3362.00	63.40	49.41	49.58	0.17	NA	0.25	9.25	3312.56	
RW-2	06/29/18	3362.00	63.40	49.44	49.60	0.16	NA	0.25	9.75	3312.54	
RW-2	07/05/18	3362.00	63.40	49.40	49.55	0.15	NA	0.25	9.75	3312.58	
RW-2	07/11/18	3362.00	63.40	49.46	49.60	0.14	NA	0.25	9.75	3312.52	
RW-2	07/18/18	3362.00	63.40	49.30	49.58	0.28	NA	sheen	10.00	3312.66	
RW-2	07/26/18	3362.00	63.40	49.32	49.62	0.30	NA	0.25	9.75	3312.64	
RW-2	07/31/18	3362.00	63.40	49.31	49.56	0.25	NA	sheen	10.00	3312.65	
RW-2	08/07/18	3362.00	63.40	49.27	49.52	0.25	NA	0.25	9.75	3312.69	
RW-2	08/14/18	3362.00	63.40	49.26	49.58	0.32	NA	0.25	9.75	3312.69	
RW-2	08/21/18	3362.00	63.40	49.25	49.55	0.30	NA	0.25	9.75	3312.71	
RW-2	08/30/18	3362.00	63.40	49.31	49.50	0.19	NA	0.25	9.75	3312.66	
RW-2	09/05/18	3362.00	63.40	49.35	49.59	0.24	NA	0.25	9.75	3312.61	
RW-2	09/18/18	3362.00	63.40	49.25	49.49	0.24	NA	0.25	9.75	3312.71	
RW-2	09/26/18	3362.00	63.40	49.30	49.51	0.21	NA	0.25	9.75	3312.67	
RW-2	10/03/18	3362.00	63.40	49.30	49.56	0.26	NA	0.25	9.75	3312.66	
RW-2	10/11/18	3362.00	63.40	49.25	49.55	0.30	NA	0.25	9.75	3312.71	
RW-2	10/17/18	3362.00	63.40	48.96	49.11	0.15	NA	0.25	9.75	3313.02	
RW-2	10/24/18	3362.00	63.40	49.00	49.22	0.22	NA	sheen	10.00	3312.97	
RW-2	10/31/18	3362.00	63.40	49.16	49.42	0.26	NA	0.25	9.75	3312.80	
RW-2	11/06/18	3362.00	63.40	49.22	49.40	0.18	NA	0.25	9.75	3312.75	
RW-2	11/13/18	3362.00	63.40	49.25	49.47	0.22	NA	0.25	9.75	3312.72	
RW-2	11/21/18	3362.00	63.40	49.18	49.40	0.22	NA	0.25	9.75	3312.79	
RW-2	11/27/18	3362.00	63.40	49.20	49.48	0.28	NA	0.25	9.75	3312.76	
RW-2	12/72018	3362.00	63.40	49.21	49.41	0.20	NA	0.25	9.75	3312.76	

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
RW-2	12/12/18	3362.00	63.40	49.25	49.51	0.26	NA	0.25	9.75	3312.71	
RW-2	12/18/18	3362.00	63.40	49.20	49.55	0.35	NA	0.25	9.75	3312.75	
RW-2	01/03/19	3362.00	63.40	49.21	49.56	0.35	NA	0.25	9.75	3312.74	
RW-2	01/08/19	3362.00	63.40	49.19	49.58	0.39	NA	0.50	9.50	3312.75	
RW-2	01/29/19	3362.00	63.40	49.15	49.90	0.75	NA	sheen	10.00	3312.74	
RW-2	02/05/19	3362.00	63.40	49.18	49.32	0.14	NA	0.25	9.75	3312.80	Sampled
RW-2	02/12/19	3362.00	63.40	49.18	49.40	0.22	NA	0.25	9.25	3312.79	
RW-2	02/27/19	3362.00	63.40	49.15	49.38	0.23	NA	0.25	9.25	3312.82	
RW-2	03/06/19	3362.00	63.40	49.18	49.40	0.22	NA	0.25	9.75	3312.79	
RW-2	03/12/19	3362.00	63.40	49.20	49.40	0.20	NA	sheen	10.00	3312.77	
RW-2	03/21/19	3362.00	63.40	49.19	49.41	0.22	NA	0.25	9.75	3312.78	
RW-2	03/28/19	3362.00	63.40	49.26	49.49	0.23	NA	sheen	10.00	3312.71	
RW-2	04/02/19	3362.00	63.40	49.20	49.44	0.24	NA	0.25	9.75	3312.76	
RW-2	04/10/19	3362.00	63.40	49.17	49.36	0.19	NA	sheen	10.00	3312.80	
RW-2	04/16/19	3362.00	63.40	49.19	49.42	0.23	NA	0.25	9.75	3312.78	
RW-2	04/24/19	3362.00	63.40	49.21	49.40	0.19	NA	0.25	9.75	3312.76	
RW-2	05/01/19	3362.00	63.40	48.90	49.12	0.22	NA	0.25	9.75	3313.07	
RW-2	05/08/19	3362.00	63.40	49.00	49.11	0.12	NA	sheen	10.00	3312.99	
RW-2	05/17/19	3362.00	63.40	48.99	49.15	0.16	NA	sheen	10.00	3312.99	
RW-2	05/24/19	3362.00	63.40	49.01	49.18	0.17	NA	sheen	10.00	3312.96	
RW-2	06/05/19	3362.00	63.40	48.89	48.94	0.05	NA	sheen	10.00	3313.10	
RW-2	06/14/19	3362.00	63.40	48.88	48.99	0.11	NA	0.50	9.50	3313.10	
RW-2	06/20/19	3362.00	63.40	48.91	48.97	0.06	NA	sheen	9.75	3313.08	
RW-2	06/25/19	3362.00	63.40	48.92	49.10	0.18	NA	0.50	9.50	3313.05	
RW-2	07/02/19	3362.00	63.40	48.95	49.10	0.15	NA	sheen	10.00	3313.03	
RW-2	07/10/19	3362.00	63.40	48.93	49.10	0.17	NA	0.25	9.75	3313.04	
RW-2	07/26/19	3362.00	63.40	48.86	48.88	0.02	NA	sheen	10.00	3313.14	
RW-2	08/11/19	3362.00	63.40	48.94	49.27	0.33	NA	0.25	9.75	3313.01	
RW-2	08/14/19	3362.00	63.40	48.96	49.21	0.25	NA	0.25	9.75	3313.00	
RW-2	08/21/19	3362.00	63.40	48.98	48.99	0.01	NA	sheen	10.00	3313.02	
RW-2	09/06/19	3362.00	63.40	48.95	49.12	0.17	NA	0.25	9.75	3313.02	
RW-2	09/12/19	3362.00	63.40	48.98	49.15	0.17	NA	0.25	9.75	3312.99	
RW-2	09/19/19	3362.00	63.40	48.92	49.12	0.20	NA	1.00	9.00	3313.05	
RW-2	09/26/19	3362.00	63.40	49.30	49.51	0.21	NA	0.25	9.75	3312.67	
RW-2	10/16/19	3362.00	63.40	48.26	49.25	0.99	NA	0.25	9.75	3313.59	
RW-2	10/23/19	3362.00	63.40	48.95	49.05	0.10	NA	sheen	10.00	3313.04	
RW-2	10/31/19	3362.00	63.40	48.98	49.12	0.14	NA	sheen	10.00	3313.00	
RW-2	11/05/19	3362.00	63.40	48.91	49.04	0.13	NA	NA	NA	3313.07	
RW-2	11/14/19	3362.00	63.40	48.94	48.98	0.04	NA	0.25	9.75	3313.05	
RW-2	11/26/19	3362.00	63.40	48.80	49.05	0.25	NA	0.25	9.75	3313.16	

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
RW-2	12/03/19	3362.00	63.40	48.89	49.13	0.24	NA	sheen	10.00	3313.07	
RW-2	12/13/19	3362.00	63.40	48.91	49.14	0.23	NA	sheen	10.00	3313.06	
RW-2	12/20/19	3362.00	63.40	48.90	49.00	0.10	NA	sheen	10.00	3313.09	
RW-2	12/26/19	3362.00	63.40	48.88	48.92	0.04	NA	sheen	10.00	3313.11	
RW-3	01/03/18	3361.93	63.80	50.12	50.30	0.18	NA	sheen	10.00	3311.78	
RW-3	01/10/18	3361.93	63.80	50.08	50.14	0.06	NA	sheen	10.00	3311.84	
RW-3	01/17/18	3361.93	63.80	50.12	50.13	0.01	NA	1.00	9.00	3311.81	
RW-3	01/25/18	3361.93	63.80	50.01	50.10	0.09	NA	1.00	9.00	3311.91	
RW-3	02/01/18	3361.93	63.80	50.01	50.35	0.34	NA	1.00	9.00	3311.87	
RW-3	02/14/18	3361.93	63.80	50.00	50.09	0.09	NA	sheen	10.00	3311.92	
RW-3	02/21/18	3361.93	63.80	50.02	50.14	0.12	NA	sheen	10.00	3311.89	
RW-3	02/28/18	3361.93	63.80	49.90	50.10	0.20	NA	0.50	9.50	3312.00	
RW-3	03/06/18	3361.93	63.80	49.97	50.14	0.17	NA	NA	NA	3311.93	
RW-3	03/15/18	3361.93	63.80	49.92	50.11	0.19	NA	sheen	10.00	3311.98	
RW-3	03/22/18	3361.93	63.80	50.00	50.10	0.10	NA	sheen	10.00	3311.92	
RW-3	03/28/18	3361.93	63.80	50.00	50.22	0.22	NA	0.25	9.75	3311.90	
RW-3	04/04/18	3361.93	63.80	50.00	50.18	0.18	NA	sheen	10.00	3311.90	
RW-3	04/11/18	3361.93	63.80	50.03	50.19	0.16	NA	sheen	10.00	3311.88	
RW-3	04/19/18	3361.93	63.80	49.99	50.16	0.17	NA	sheen	10.00	3311.91	
RW-3	04/24/18	3361.93	63.80	50.00	50.18	0.18	NA	sheen	10.00	3311.90	
RW-3	05/02/18	3361.93	63.80	49.88	49.99	0.11	NA	sheen	10.00	3312.03	
RW-3	05/09/18	3361.93	63.80	49.92	50.02	0.10	NA	sheen	10.00	3312.00	
RW-3	05/15/18	3361.93	63.80	49.90	50.08	0.18	NA	sheen	10.00	3312.00	
RW-3	05/22/18	3361.93	63.80	49.87	50.05	0.18	NA	sheen	10.00	3312.03	
RW-3	05/30/18	3361.93	63.80	49.89	50.00	0.11	NA	sheen	10.00	3312.02	
RW-3	06/12/18	3361.93	63.80	49.89	50.06	0.17	NA	0.25	9.75	3312.01	Sampled
RW-3	06/19/18	3361.93	63.80	49.92	50.03	0.11	NA	sheen	10.00	3311.99	
RW-3	06/29/18	3361.93	63.80	49.95	50.04	0.09	NA	sheen	10.00	3311.97	
RW-3	07/05/18	3361.93	63.80	49.90	50.05	0.15	NA	0.25	9.75	3312.01	
RW-3	07/11/18	3361.93	63.80	49.96	50.07	0.11	NA	0.25	9.75	3311.95	
RW-3	07/18/18	3361.93	63.80	49.83	50.08	0.25	NA	0.25	9.75	3312.06	
RW-3	07/26/18	3361.93	63.80	49.86	50.12	0.26	NA	0.25	9.75	3312.03	
RW-3	07/31/18	3361.93	63.80	49.85	50.09	0.24	NA	0.25	9.75	3312.04	
RW-3	08/07/18	3361.93	63.80	49.80	50.03	0.23	NA	0.25	9.75	3312.10	

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
RW-3	08/14/18	3361.93	63.80	49.82	50.09	0.27	NA	0.25	9.75	3312.07	
RW-3	08/21/18	3361.93	63.80	49.81	50.08	0.27	NA	0.25	9.75	3312.08	
RW-3	08/30/18	3361.93	63.80	49.86	50.06	0.20	NA	0.25	9.75	3312.04	
RW-3	09/05/18	3361.93	63.80	49.90	50.11	0.21	NA	0.25	9.75	3312.00	
RW-3	09/18/18	3361.93	63.80	49.83	50.01	0.18	NA	0.25	9.75	3312.07	
RW-3	09/26/18	3361.93	63.80	49.86	50.02	0.16	NA	0.25	9.75	3312.05	
RW-3	10/03/18	3361.93	63.80	49.88	50.09	0.21	NA	0.25	9.75	3312.02	
RW-3	10/11/18	3361.93	63.80	49.81	50.10	0.29	NA	0.25	9.75	3312.08	
RW-3	10/17/18	3361.93	63.80	49.68	49.90	0.22	NA	0.25	9.75	3312.22	
RW-3	10/24/18	3361.93	63.80	49.82	50.01	0.19	NA	0.25	9.75	3312.08	
RW-3	10/31/18	3361.93	63.80	49.83	50.01	0.18	NA	0.25	9.75	3312.07	
RW-3	11/09/18	3361.93	63.80	49.78	49.96	0.18	NA	0.25	9.75	3312.12	
RW-3	11/13/18	3361.93	63.80	49.86	49.99	0.13	NA	0.25	9.75	3312.05	
RW-3	11/21/18	3361.93	63.80	49.88	50.00	0.12	NA	0.25	9.75	3312.03	
RW-3	11/27/18	3361.93	63.80	49.82	49.94	0.12	NA	0.25	9.75	3312.09	
RW-3	12/07/18	3361.93	63.80	49.89	50.02	0.13	NA	0.25	9.75	3312.02	
RW-3	12/12/18	3361.93	63.80	49.92	50.08	0.16	NA	0.25	9.75	3311.99	
RW-3	12/18/18	3361.93	63.80	49.90	50.09	0.19	NA	0.25	9.75	3312.00	
RW-3	01/03/19	3361.93	63.80	49.94	50.11	0.17	NA	sheen	10.00	3311.96	
RW-3	01/08/19	3361.93	63.80	49.92	50.12	0.20	NA	0.25	9.75	3311.98	
RW-3	01/29/19	3361.93	63.80	49.65	49.74	0.09	NA	sheen	10.00	3312.27	
RW-3	02/05/19	3361.93	63.80	49.76	49.90	0.14	NA	0.25	9.75	3312.15	
RW-3	02/12/19	3361.93	63.80	49.72	49.79	0.07	NA	0.25	9.75	3312.20	Sampled
RW-3	02/27/19	3361.93	63.80	49.70	49.81	0.11	NA	sheen	10.00	3312.21	
RW-3	03/06/19	3361.93	63.80	49.73	49.86	0.13	NA	0.25	9.75	3312.18	
RW-3	03/12/19	3361.93	63.80	49.75	49.91	0.16	NA	sheen	10.00	3312.16	
RW-3	03/21/19	3361.93	63.80	49.77	49.98	0.21	NA	sheen	10.00	3312.13	
RW-3	03/28/19	3361.93	63.80	49.71	49.99	0.28	NA	0.25	9.75	3312.18	
RW-3	04/02/19	3361.93	63.80	49.77	49.94	0.17	NA	sheen	10.00	3312.13	
RW-3	04/10/19	3361.93	63.80	49.70	49.86	0.16	NA	0.25	9.75	3312.21	
RW-3	04/16/19	3361.93	63.80	49.72	49.86	0.14	NA	sheen	10.00	3312.19	
RW-3	04/24/19	3361.93	63.80	49.75	49.87	0.12	NA	sheen	10.00	3312.16	
RW-3	05/01/19	3361.93	63.80	49.45	49.56	0.11	NA	sheen	10.00	3312.46	
RW-3	05/08/19	3361.93	63.80	49.47	49.54	0.07	NA	0.25	9.75	3312.45	

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
RW-3	05/17/19	3361.93	63.80	48.99	49.15	0.16	NA	0.25	9.75	3312.92	
RW-3	05/24/19	3361.93	63.80	49.01	49.18	0.17	NA	0.25	9.75	3312.89	
RW-3	06/05/19	3361.93	63.80	49.63	49.76	0.13	NA	sheen	10.00	3312.28	
RW-3	06/14/19	3361.93	63.80	49.43	49.45	0.02	NA	sheen	10.00	3312.50	
RW-3	06/20/19	3361.93	63.80	49.65	49.79	0.14	NA	sheen	10.00	3312.26	
RW-3	06/25/19	3361.93	63.80	49.48	49.49	0.01	NA	sheen	10.00	3312.45	
RW-3	07/02/19	3361.93	63.80	49.49	49.56	0.07	NA	sheen	10.00	3312.43	
RW-3	07/10/19	3361.93	63.80	49.49	49.52	0.03	NA	sheen	10.00	3312.44	
RW-3	07/26/19	3361.93	63.80	49.40	49.48	0.08	NA	sheen	10.00	3312.52	
RW-3	08/11/19	3361.93	63.80	49.48	49.56	0.08	NA	sheen	10.00	3312.44	
RW-3	08/14/19	3361.93	63.80	49.53	49.61	0.08	NA	sheen	10.00	3312.39	
RW-3	08/21/19	3361.93	63.80	49.48	49.49	0.01	NA	sheen	10.00	3312.45	
RW-3	09/06/19	3361.93	63.80	49.52	49.55	0.03	NA	0.25	9.75	3312.41	
RW-3	09/12/19	3361.93	63.80	49.52	49.53	0.01	NA	sheen	10.00	3312.41	
RW-3	09/19/19	3361.93	63.80	49.47	49.50	0.03	NA	sheen	10.00	3312.46	
RW-3	09/26/19	3361.93	63.80	49.86	50.02	0.16	NA	0.25	9.75	3312.05	
RW-3	10/16/19	3361.93	63.80	49.52	49.58	0.06	NA	sheen	10.00	3312.40	
RW-3	10/23/19	3361.93	63.80	49.48	49.52	0.04	NA	sheen	10.00	3312.44	
RW-3	10/31/19	3361.93	63.80	49.52	49.54	0.02	NA	sheen	10.00	3312.41	
RW-3	11/05/19	3361.93	63.80	49.45	49.47	0.02	NA	NA	NA	3312.48	
RW-3	11/14/19	3361.93	63.80	49.50	49.52	0.02	NA	sheen	10.00	3312.43	
RW-3	11/26/19	3361.93	63.80	49.41	49.43	0.02	NA	sheen	10.00	3312.52	
RW-3	12/03/19	3361.93	63.80	49.42	49.45	0.03	NA	sheen	10.00	3312.51	
RW-3	12/13/19	3361.93	63.80	49.47	49.50	0.03	NA	sheen	10.00	3312.46	
RW-3	12/20/19	3361.93	63.80	49.48	49.52	0.04	NA	sheen	10.00	3312.44	
RW-3	12/26/19	3361.93	63.80	49.45	49.48	0.03	NA	0.25	9.75	3312.48	0.09390244
RW-4	03/06/18	3363.22	63.65	ND	49.86	ND	NA	NA	NA	3313.36	Sampled
RW-4	06/12/18	3363.22	63.65	ND	49.68	ND	NA	NA	NA	3313.54	Sampled
RW-4	09/05/18	3363.22	63.65	ND	49.69	ND	NA	NA	NA	3313.53	Sampled
RW-4	11/27/18	3363.22	63.65	ND	49.52	ND	NA	NA	NA	3313.70	Sampled
RW-4	02/12/19	3363.22	63.65	ND	49.46	ND	NA	NA	NA	3313.76	Sampled
RW-4	05/08/19	3363.22	63.65	ND	49.22	ND	NA	NA	NA	3314.00	Sampled
RW-4	08/21/19	3363.22	63.65	ND	49.21	ND	NA	NA	NA	3314.01	Sampled
RW-4	11/05/19	3363.22	63.65	ND	49.20	ND	NA	NA	NA	3314.02	Sampled
RW-5	03/06/18	3362.38	64.07	ND	49.49	ND	NA	NA	NA	3312.89	Sampled
RW-5	06/12/18	3362.38	64.07	ND	49.31	ND	NA	NA	NA	3313.07	Sampled
RW-5	09/05/18	3362.38	64.07	ND	49.29	ND	NA	NA	NA	3313.09	Sampled
RW-5	11/27/18	3362.38	64.07	ND	49.18	ND	NA	NA	NA	3313.20	Sampled

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
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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)	Comments
								PSH	H_2O		
RW-5	02/13/19	3362.38	64.07	ND	49.11	ND	NA	NA	NA	3313.27	Sampled
RW-5	05/08/19	3362.38	64.07	ND	48.84	ND	NA	NA	NA	3313.54	Sampled
RW-5	08/21/19	3362.38	64.07	ND	48.87	ND	NA	NA	NA	3313.51	Sampled
RW-5	11/05/19	3362.38	64.07	ND	48.85	ND	NA	NA	NA	3313.53	Sampled
RW-6	03/06/18	3363.11	64.27	ND	50.72	ND	NA	NA	NA	3312.39	Sampled
RW-6	06/12/18	3363.11	64.27	ND	50.60	ND	NA	NA	NA	3312.51	Sampled
RW-6	09/05/18	3363.11	64.27	ND	50.60	ND	NA	NA	NA	3312.51	Sampled
RW-6	11/27/18	3363.11	64.27	ND	50.45	ND	NA	NA	NA	3312.66	Sampled
RW-6	02/12/19	3363.11	64.27	ND	50.38	ND	NA	NA	NA	3312.73	Sampled
RW-6	05/08/19	3363.11	64.27	ND	50.12	ND	NA	NA	NA	3312.99	Sampled
RW-6	08/21/19	3363.11	64.27	ND	50.16	ND	NA	NA	NA	3312.95	Sampled
RW-6	11/05/19	3363.11	64.27	ND	50.12	ND	NA	NA	NA	3312.99	Sampled
RW-7	03/06/18	3362.52	68.56	ND	49.41	ND	NA	NA	NA	3313.11	Sampled
RW-7	06/12/18	3362.52	68.56	ND	49.25	ND	NA	NA	NA	3313.27	Sampled
RW-7	09/05/18	3362.52	68.56	ND	49.25	ND	NA	NA	NA	3313.27	Sampled
RW-7	11/27/18	3362.52	68.56	ND	49.10	ND	NA	NA	NA	3313.42	Sampled
RW-7	02/12/19	3362.52	68.56	ND	49.04	ND	NA	NA	NA	3313.48	Sampled
RW-7	05/08/19	3362.52	68.56	ND	48.82	ND	NA	NA	NA	3313.70	Sampled
RW-7	08/21/19	3362.52	68.56	ND	48.84	ND	NA	NA	NA	3313.68	Sampled
RW-7	11/05/19	3362.52	68.56	ND	48.80	ND	NA	NA	NA	3313.72	Sampled
RW-8	01/03/18	3362.52	68.34	50.08	50.55	0.47	NA	2.00	23.00	3312.37	
RW-8	01/10/18	3362.52	68.34	50.02	50.41	0.39	NA	2.00	23.00	3312.44	
RW-8	01/17/18	3362.52	68.34	50.12	50.54	0.42	NA	4.00	21.00	3312.34	
RW-8	01/25/18	3362.52	68.34	49.98	50.39	0.41	NA	6.00	14.00	3312.48	
RW-8	02/01/18	3362.52	68.34	49.49	50.35	0.86	NA	3.00	22.00	3312.90	
RW-8	02/14/18	3362.52	68.34	49.94	50.29	0.35	NA	3.00	22.00	3312.53	
RW-8	02/21/18	3362.52	68.34	49.96	50.35	0.39	NA	0.50	24.50	3312.50	
RW-8	02/28/18	3362.52	68.34	49.88	50.20	0.32	NA	1.00	24.00	3312.59	
RW-8	03/06/18	3362.52	68.34	49.95	50.76	0.81	NA	NA	NA	3312.45	
RW-8	03/15/18	3362.52	68.34	49.91	50.49	0.58	NA	3.00	22.00	3312.52	
RW-8	03/22/18	3362.52	68.34	49.98	50.50	0.52	NA	2.00	23.00	3312.46	
RW-8	03/28/18	3362.52	68.34	50.04	50.21	0.17	NA	2.00	23.00	3312.45	
RW-8	04/04/18	3362.52	68.34	49.99	50.26	0.27	NA	2.00	23.00	3312.49	
RW-8	04/11/18	3362.52	68.34	49.98	50.28	0.30	NA	2.00	23.00	3312.50	
RW-8	04/19/18	3362.52	68.34	50.04	50.31	0.27	NA	2.00	23.00	3312.44	

TABLE 2
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Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
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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)	Comments
								PSH	H_2O		
RW-8	04/24/18	3362.52	68.34	49.98	50.26	0.28	NA	2.00	23.00	3312.50	
RW-8	05/02/18	3362.52	68.34	49.87	50.28	0.41	NA	3.00	22.00	3312.59	
RW-8	05/09/18	3362.52	68.34	49.90	50.26	0.36	NA	3.00	22.00	3312.57	
RW-8	05/15/18	3362.52	68.34	49.85	50.26	0.41	NA	3.00	22.00	3312.61	
RW-8	05/22/18	3362.52	68.34	49.84	50.21	0.37	NA	2.00	23.00	3312.62	
RW-8	05/30/18	3362.52	68.34	49.87	50.11	0.24	NA	2.00	23.00	3312.61	
RW-8	06/12/18	3362.52	68.34	49.85	50.15	0.30	NA	2.00	23.00	3312.63	sampled
RW-8	06/19/18	3362.52	68.34	49.88	50.11	0.23	NA	3.00	22.00	3312.61	
RW-8	06/29/18	3362.52	68.34	49.91	50.09	0.18	NA	3.00	22.00	3312.58	
RW-8	07/05/18	3362.52	68.34	49.86	50.33	0.47	NA	2.00	13.00	3312.59	
RW-8	07/11/18	3362.52	68.34	49.9	50.28	0.38	NA	2.00	23.00	3312.56	
RW-8	07/18/18	3362.52	68.34	49.82	50.14	0.32	NA	2.00	23.00	3312.65	
RW-8	07/26/18	3362.52	68.34	49.88	50.30	0.42	NA	2.00	23.00	3312.58	
RW-8	07/26/18	3362.52	68.34	49.9	50.28	0.38	NA	2.00	23.00	3312.56	
RW-8	08/07/18	3362.52	68.34	49.86	50.23	0.37	NA	3.00	22.00	3312.60	
RW-8	08/14/18	3362.52	68.34	49.81	50.23	0.42	NA	2.00	23.00	3312.65	
RW-8	08/21/18	3362.52	68.34	49.8	50.26	0.46	NA	3.00	22.00	3312.65	
RW-8	08/30/18	3362.52	68.34	49.91	50.22	0.31	NA	2.00	23.00	3312.56	
RW-8	09/05/18	3362.52	68.34	49.88	50.21	0.33	NA	2.00	23.00	3312.59	
RW-8	09/18/18	3362.52	68.34	49.78	50.24	0.46	NA	2.00	23.00	3312.67	
RW-8	09/26/18	3362.52	68.34	49.88	50.31	0.43	NA	3.00	22.00	3312.58	
RW-8	10/03/18	3362.52	68.34	49.91	50.36	0.45	NA	3.00	22.00	3312.54	
RW-8	10/11/18	3362.52	68.34	49.85	50.29	0.44	NA	3.00	22.00	3312.60	
RW-8	10/17/18	3362.52	68.34	49.65	49.94	0.29	NA	3.00	22.00	3312.83	
RW-8	10/24/18	3362.52	68.34	49.85	50.16	0.31	NA	2.00	23.00	3312.62	
RW-8	10/31/18	3362.52	68.34	49.88	50.09	0.21	NA	3.00	22.00	3312.61	
RW-8	11/06/18	3362.52	68.34	49.72	50.06	0.34	NA	3.00	22.00	3312.75	
RW-8	11/13/18	3362.52	68.34	49.9	50.11	0.21	NA	3.00	22.00	3312.59	
RW-8	11/21/18	3362.52	68.34	49.69	49.90	0.21	NA	2.00	23.00	3312.80	
RW-8	11/27/18	3362.52	68.34	49.72	49.98	0.26	NA	2.00	23.00	3312.76	
RW-8	12/07/18	3362.52	68.34	49.72	49.94	0.22	NA	3.00	22.00	3312.77	
RW-8	12/12/18	3362.52	68.34	49.75	49.99	0.24	NA	2.00	23.00	3312.73	
RW-8	12/18/18	3362.52	68.34	49.78	49.96	0.18	NA	3.00	22.00	3312.71	
RW-8	01/03/19	3362.52	68.34	49.87	50.28	0.41	NA	3.00	22.00	3312.59	

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
RW-8	01/08/19	3362.52	68.34	49.82	49.99	0.17	NA	3.00	22.00	3312.67	
RW-8	01/29/19	3362.52	68.34	49.6	49.74	0.14	NA	sheen	20.00	3312.90	
RW-8	02/05/19	3362.52	68.34	49.19	49.97	0.78	NA	0.50	19.50	3313.21	
RW-8	02/12/19	3362.52	68.34	49.68	49.81	0.13	NA	2.00	23.00	3312.82	
RW-8	02/27/19	3362.52	68.34	49.7	49.86	0.16	NA	2.00	23.00	3312.80	
RW-8	03/06/19	3362.52	68.34	49.76	49.96	0.20	NA	2.00	23.00	3312.73	
RW-8	03/12/19	3362.52	68.34	49.76	49.99	0.23	NA	2.00	23.00	3312.73	
RW-8	03/21/19	3362.52	68.34	49.79	50.03	0.24	NA	2.00	23.00	3312.69	
RW-8	03/28/19	3362.52	68.34	49.78	50.01	0.23	NA	2.00	23.00	3312.71	
RW-8	04/02/19	3362.52	68.34	49.8	50.05	0.25	NA	2.00	23.00	3312.68	
RW-8	04/10/19	3362.52	68.34	49.72	50.00	0.28	NA	2.00	23.00	3312.76	
RW-8	04/16/19	3362.52	68.34	49.71	50.04	0.33	NA	2.00	23.00	3312.76	
RW-8	04/24/19	3362.52	68.34	49.72	50.01	0.29	NA	2.00	23.00	3312.76	
RW-8	05/01/19	3362.52	68.34	49.42	49.61	0.19	NA	2.00	23.00	3313.07	
RW-8	05/08/19	3362.52	68.34	49.46	49.61	0.15	NA	2.00	23.00	3313.04	
RW-8	05/17/19	3362.52	68.34	49.51	49.68	0.17	NA	2.00	23.00	3312.98	
RW-8	05/24/19	3362.52	68.34	49.55	49.67	0.12	NA	2.00	23.00	3312.95	
RW-8	06/05/19	3362.52	68.34	49.59	49.73	0.14	NA	2.00	23.00	3312.91	
RW-8	06/14/19	3362.52	68.34	49.45	49.46	0.01	NA	sheen	10.00	3313.07	
RW-8	06/20/19	3362.52	68.34	49.62	49.70	0.08	NA	2.00	23.00	3312.89	
RW-8	06/25/19	3362.52	68.34	49.49	49.63	0.14	NA	0.25	10.00	3313.01	
RW-8	07/02/19	3362.52	68.34	49.51	49.53	0.02	NA	0.25	24.75	3313.01	
RW-8	07/10/19	3362.52	68.34	49.5	49.52	0.02	NA	sheen	10.00	3313.02	
RW-8	07/26/19	3362.52	68.34	49.46	49.50	0.04	NA	0.25	9.75	3313.05	
RW-8	08/11/19	3362.52	68.34	49.46	49.57	0.11	NA	0.25	1.75	3313.04	
RW-8	08/14/19	3362.52	68.34	49.48	49.53	0.05	NA	sheen	10.00	3313.03	
RW-8	08/21/19	3362.52	68.34	49.49	49.50	0.01	NA	sheen	25.00	3313.03	
RW-8	09/06/19	3362.52	68.34	49.46	49.60	0.14	NA	0.25	9.75	3313.04	
RW-8	09/12/19	3362.52	68.34	ND	49.58	ND	NA	NA	NA	3312.94	
RW-8	09/19/19	3362.52	68.34	ND	48.52	ND	NA	NA	NA	3314.00	
RW-8	09/26/19	3362.52	68.34	49.88	50.10	0.22	NA	3.00	22.00	3312.61	
RW-8	10/16/19	3362.52	68.34	49.48	49.51	0.03	NA	sheen	10.00	3313.04	
RW-8	10/23/19	3362.52	68.34	49.45	49.50	0.05	NA	2.00	23.00	3313.06	
RW-8	10/31/19	3362.52	68.34	49.55	49.62	0.07	NA	sheen	10.00	3312.96	
RW-8	11/05/19	3362.52	68.34	49.42	49.44	0.02	NA	NA	NA	3313.10	
RW-8	11/14/19	3362.52	68.34	49.58	49.60	0.02	NA	sheen	10.00	3312.94	
RW-8	11/26/19	3362.52	68.34	49.38	49.41	0.03	NA	sheen	10.00	3313.14	
RW-8	12/03/19	3362.52	68.34	49.39	49.40	0.01	NA	sheen	10.00	3313.13	

TABLE 2
Historical Well Survey Data and Groundwater Elevations
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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)	Comments
								PSH	H_2O		
RW-8	12/13/19	3362.52	68.34	49.35	49.40	0.05	NA	NA	NA	3313.16	MDPE
RW-8	12/20/19	3362.52	68.34	ND	49.42	ND	NA	3.00	22.00	3313.10	
RW-8	12/26/19	3362.52	68.34	ND	49.40	ND	NA	2.00	23.00	3313.12	0.14

Wells re-surveyed in November 2006, RW-2 used as bench mark (3362.00 ft)

NA: Not applicable
ND: Not detected
NG: Not gauged
* Possible error in field reading, corrected and noted as such in field notes

TABLE 3
2019 Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-1	02/12/19	L1069996-01	<0.001	<0.001	<0.001	<0.003
MW-1	05/08/19	L1097774-01	<0.001	0.00486	<0.001	<0.003
MW-1	08/22/19	L1132369-01	<0.001	<0.001	<0.001	<0.003
MW-1	11/06/19	L1158995-01	<0.001	<0.001	<0.001	<0.003
MW-2	02/12/19	L1069996-02	<0.001	<0.001	<0.001	<0.003
MW-2	05/08/19	L1097774-02	<0.001	0.00488	<0.001	<0.003
MW-2	08/22/19	L1132369-02	<0.001	<0.001	<0.001	<0.003
MW-2	11/06/19	L1158995-02	<0.001	<0.001	<0.001	<0.003
MW-3	02/12/19	L1069996-03	<0.001	<0.001	<0.001	<0.003
MW-3	05/08/19	L1097774-03	<0.001	<0.001	<0.001	<0.003
MW-3	08/22/19	L1132369-03	<0.001	<0.001	<0.001	<0.003
MW-3	11/06/19	L1158995-03	<0.001	<0.001	<0.001	<0.003
MW-4	02/12/19	L1069996-04	<0.001	<0.001	<0.001	<0.003
MW-4	05/08/19	L1097774-04	<0.001	0.00479	<0.001	<0.003
MW-4	08/22/19	L1132369-04	<0.001	<0.001	<0.001	<0.003
MW-4	11/06/19	L1158995-04	<0.001	<0.001	<0.001	<0.003
MW-5	02/12/19	L1069996-05	<0.001	<0.001	<0.001	<0.003
MW-5	05/08/19	L1097774-05	<0.001	<0.001	<0.001	<0.003
MW-5	08/22/19	L1132369-05	<0.001	<0.001	<0.001	<0.003
MW-5	11/06/19	L1158995-05	<0.001	<0.001	<0.001	<0.003

TABLE 3
2019 Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
MW-6	02/12/19	L1069996-06	<0.001	<0.001	<0.001	<0.003
MW-6	05/08/19	L1097774-06	<0.001	<0.001	<0.001	<0.003
MW-6	08/22/19	L1132369-06	<0.001	<0.001	<0.001	<0.003
MW-6	11/06/19	L1158995-06	<0.001	<0.001	<0.001	<0.003
MW-7	02/12/19	L1069996-07	<0.001	<0.001	<0.001	<0.003
MW-7	05/08/19	L1097774-07	<0.001	0.00461	<0.001	<0.003
MW-7	08/22/19	L1132369-07	<0.001	<0.001	<0.001	<0.003
MW-7	11/06/19	L1158995-07	<0.001	<0.001	<0.001	<0.003
RW-1	02/12/19	NS	NS	NS	NS	NS
RW-1	05/08/19	L1097774-08	**0.0110**	<0.005	0.109	0.162
RW-1	08/22/19	NS	NS	NS	NS	NS
RW-1	11/06/19	L1158995-08	<0.005	<0.005	0.0245	0.0928
RW-2	02/12/19	NS	NS	NS	NS	NS
RW-2	05/08/19	L1097774-09	**0.0438**	0.0380	0.174	0.441
RW-2	08/22/19	NS	NS	NS	NS	NS
RW-2	11/06/19	NS	NS	NS	NS	NS
RW-3	02/12/19	NS	NS	NS	NS	NS
RW-3	05/08/19	L1097774-10	<0.005	0.00685	0.142	0.373
RW-3	08/22/19	NS	NS	NS	NS	NS
RW-3	11/06/19	NS	NS	NS	NS	NS

TABLE 3
2019 Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B			
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
			NMOCD Remediation Criteria			
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L
RW-4	02/12/19	L1069996-08	<0.001	<0.001	<0.001	<0.003
RW-4	05/08/19	L1097774-15	<0.001	<0.001	<0.001	<0.003
RW-4	08/22/19	L1132369-08	<0.001	<0.001	<0.001	<0.003
RW-4	11/06/19	L1158995-09	<0.001	<0.001	<0.001	<0.003
RW-5	02/12/19	L1069996-09	<0.001	<0.001	<0.001	<0.003
RW-5	05/08/19	L1097774-11	<0.001	<0.001	<0.001	<0.003
RW-5	08/22/19	L1132369-09	<0.001	<0.001	<0.001	<0.003
RW-5	11/06/19	L1158995-10	<0.001	<0.001	<0.001	<0.003
RW-6	02/12/19	L1069996-10	<0.001	<0.001	<0.001	<0.003
RW-6	05/08/19	L1097774-12	<0.001	<0.001	<0.001	<0.003
RW-6	08/22/19	L1132369-10	<0.001	<0.001	<0.001	<0.003
RW-6	11/06/19	L1158995-11	<0.001	<0.001	<0.001	<0.003
RW-7	02/12/19	L1069996-11	0.00105	<0.001	0.00771	<0.003
RW-7	05/08/19	L1097774-13	<0.001	<0.001	0.00363	<0.003
RW-7	08/22/19	L1132369-11	<0.001	<0.001	0.00122	<0.003
RW-7	11/06/19	L1158995-12	<0.001	<0.001	<0.001	<0.003
RW-8	02/12/19	NS	NS	NS	NS	NS
RW-8	05/08/19	L1097774-14	**0.0624**	0.00759	0.126	0.247
RW-8	08/22/19	NS	NS	NS	NS	NS
RW-8	11/06/19	NS	NS	NS	NS	NS

TABLE 3
2019 Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

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

NS - not sampled

NMOCD: New Mexico Oil Conservation Division

Exceedences of NMOCD Remediation Criteria are shown in ***bold***

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
MW-1	03/29/06	T13036-1	**0.557**	0.0032	0.0133	0.0092	
MW-1	06/10/06	T13862-1	**0.639** [a]	<0.00036	0.0033	0.0015 J	
MW-1	09/12/06	T14676-1	**0.512** [a]	<0.00020	<0.00033	<0.00036	
MW-1	12/06/06	T15618-1	**0.452** [a]	<0.00020	0.0049	<0.00036	
MW-1	02/28/07	T16494-1	**0.481** [a]	<0.00020	0.0191	<0.00036	
MW-1	05/30/07	T17645-1	**0.213** [a]	<0.00023	0.0043	<0.00055	
MW-1	09/06/07	T18811-1	**0.066**	<0.00023	0.006	<0.00055	
MW-1	11/13/07	T19737-1	**0.0955** [c]	<0.001	0.0091	<0.003	
MW-1	02/26/08	T21028-1	**0.0156**	<0.00023	0.00069 J	<0.00055	
MW-1	05/28/08	T22367-1	**0.031**	<0.00023	0.0022	<0.00055	
MW-1	08/18/08	T23538-1	0.001	<0.0005	<0.0005	<0.001	
MW-1	11/19/08	8112008	**0.0209**	0.00120	0.00330	<0.00100	
MW-1	02/17/09	187728	0.0027	<0.001	<0.001	<0.001	
MW-1	05/19/09	196550	0.0004 J	<0.000281	<0.000535	<0.000960	
MW-1	08/26/09	208325	<0.000133	<0.000281	<0.000535	<0.000960	
MW-1	11/18/09	215413	**0.223**	<0.00332	0.0617	<0.00143	
MW-1	02/11/10	222481	**0.0769**	<0.0004	0.0042	<0.000379	
MW-1	05/12/10	1005475-01	<0.0010	<0.0010	<0.0010	<0.0030	
MW-1	08/26/10	1008909-01	**0.017**	<0.0010	<0.0010	<0.0030	
MW-1	11/18/10	1011749-01	0.0077	<0.0010	<0.0010	<0.0030	
MW-1	02/23/11	1102701-04	**0.025**	<0.0010	<0.0010	<0.0030	
MW-1	06/01/11	1106050-01	0.0004 J	<0.0010	<0.0010	<0.0030	
MW-1	08/30/11	11081008-01	<0.001	<0.0010	<0.0010	<0.0030	
MW-1	11/28/11	1111901-01	<0.001	<0.0010	<0.0010	<0.0030	
MW-1	02/22/12	1202864-01	0.0010	<0.0010	<0.0010	<0.0030	
MW-1	05/22/12	12051078-01	<0.001	<0.0010	<0.0010	<0.0030	
MW-1	09/11/12	1209475-01	<0.001	<0.001	<0.001	<0.003	
MW-1	11/26/12	1211904-01	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
MW-1	02/27/13	L622455-01	<0.001	<0.005	<0.001	<0.003	
MW-1	06/11/13	L641163-01	<0.001	<0.005	<0.001	<0.003	
MW-1	09/10/13	L656835-01	<0.001	<0.005	<0.001	<0.003	
MW-1	11/07/13	L667856-01	0.00046 J	<0.005	<0.001	<0.003	
MW-1	03/05/14	L686955-01	<0.001	<0.005	<0.001	<0.003	
MW-1	06/03/14	L703477-01	<0.001	<0.005	<0.001	<0.003	
MW-1	09/17/14	L722791-01	<0.001	<0.005	<0.001	<0.003	
MW-1	11/12/14	L733897-01	<0.001	<0.005	<0.001	<0.003	
MW-1	02/25/15	L750722-01	<0.001	<0.005	<0.001	<0.003	
MW-1	06/16/15	L772255-01	<0.001	<0.005	<0.001	<0.003	
MW-1	08/26/15	L785959-01	<0.001	<0.005	<0.001	<0.003	
MW-1	11/17/15	L802523-01	<0.001	<0.005	<0.001	<0.003	
MW-1	03/08/16	L822589-01	<0.001	<0.005	<0.001	<0.003	
MW-1	05/17/16	L836879-01	<0.001	<0.005	<0.001	<0.003	
MW-1	09/19/16	L860929-01	<0.001	<0.005	<0.001	<0.003	
MW-1	12/14/16	L879216-01	<0.001	<0.001	<0.001	<0.003	
MW-1	02/28/17	L893439-01	<0.001	<0.001	<0.001	<0.003	
MW-1	05/08/17	L908717-01	<0.001	<0.001	<0.001	<0.003	
MW-1	09/15/17	L936891-01	<0.001	<0.001	<0.001	<0.003	
MW-1	11/29/17	L954383-01	<0.001	<0.001	<0.001	<0.003	
MW-1	03/07/18	L976397-01	<0.001	<0.001	<0.001	<0.003	
MW-1	06/12/18	L1001691-01	<0.001	<0.001	<0.001	<0.003	
MW-1	09/05/18	L1023536-01	<0.001	<0.001	<0.001	<0.003	
MW-1	11/28/18	L1048614-01	<0.001	<0.001	<0.001	<0.003	
MW-1	02/12/19	L1069996-01	<0.001	<0.001	<0.001	<0.003	
MW-1	05/08/19	L1097774-01	<0.001	0.00486	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			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	08/22/19	L1132369-01	<0.001	<0.001	<0.001	<0.003	
MW-1	11/06/19	L1158995-01	<0.001	<0.001	<0.001	<0.003	
MW-2	03/29/06	T 13036-2	0.0012	0.0011	0.00042	<0.00072	
MW-2	06/10/06	T13862-2	0.00038 J	<0.00036	<0.00035	<0.00072	
MW-2	09/12/06	T14676-2	<0.00035	<0.00020	<0.00033	<0.00036	
MW-2	12/06/06	T15618-2	0.0012	0.00087 J	<0.00033	<0.00036	
MW-2	02/28/07	T16494-2	0.0044	0.0017	<0.00033	<0.00036	
MW-2	05/30/07	T17645-2	0.00065 J	<0.00023	<0.00035	<0.00055	
MW-2	09/06/07	T18811-2	<0.00021	<0.00023	<0.00035	<0.00055	
MW-2	11/13/07	T19737-2	<0.001	<0.001	<0.001	<0.003	
MW-2	02/26/08	T21028-2	<0.00021	<0.00023	<0.00035	<0.00055	
MW-2	05/28/08	T22367-2	<0.00021	<0.00023	<0.00035	<0.00055	
MW-2	08/18/08	T23538-2	0.00065 J	<0.0005	<0.0005	<0.001	
MW-2	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100	
MW-2	02/17/09	187729	<0.00100	<0.00100	<0.00100	<0.00100	
MW-2	05/19/09	196551	<0.000133	<0.000281	<0.000535	0.0018	
MW-2	08/26/09	208326	<0.000149	<0.000188	<0.000178	<0.000163	
MW-2	11/18/09	215414	<0.000160	<0.000332	<0.000230	<0.000143	
MW-2	02/11/10	222482	<0.000371	<0.0004	<0.00043	<0.000379	
MW-2	05/12/10	1005475-02	<0.001	<0.001	<0.001	<0.003	
MW-2	08/26/10	1008909-02	<0.001	<0.001	<0.001	<0.003	
MW-2	11/18/10	1011749-02	<0.001	<0.001	<0.001	<0.003	
MW-2	02/23/11	1102701-05	<0.001	<0.001	<0.001	<0.003	
MW-2	06/01/11	1106050-02	<0.001	<0.001	<0.001	<0.003	
MW-2	08/30/11	11081008-02	<0.001	<0.001	<0.001	<0.003	
MW-2	11/28/11	1111901-02	<0.001	<0.001	<0.001	<0.003	
MW-2	02/22/12	1202864-02	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
MW-2	05/22/12	12051078-02	<0.001	<0.001	<0.001	<0.003	
MW-2	09/11/12	1209475-02	<0.001	<0.001	<0.001	<0.003	
MW-2	11/26/12	1211904-02	<0.001	<0.001	<0.001	<0.003	
MW-2	02/27/13	L622455-02	<0.001	<0.005	<0.001	<0.003	
MW-2	06/11/13	L641163-02	<0.001	<0.005	<0.001	<0.003	
MW-2	09/10/13	L656835-02	<0.001	<0.005	<0.001	<0.003	
MW-2	11/07/13	L667856-02	<0.001	<0.005	<0.001	<0.003	
MW-2	03/05/14	L686955-02	<0.001	<0.005	<0.001	<0.003	
MW-2	06/03/14	L703477-02	<0.001	<0.005	<0.001	<0.003	
MW-2	09/17/14	L722791-02	<0.001	<0.005	<0.001	<0.003	
MW-2	11/12/14	L733897-02	<0.001	<0.005	<0.001	<0.003	
MW-2	02/25/15	L750722-02	<0.001	<0.005	<0.001	<0.003	
MW-2	06/16/15	L772255-02	<0.001	<0.005	<0.001	<0.003	
MW-2	08/26/15	L785959-02	<0.001	<0.005	<0.001	<0.003	
MW-2	11/17/15	L802523-02	<0.001	<0.005	<0.001	<0.003	
MW-2	03/08/16	L822589-02	<0.001	<0.005	<0.001	<0.003	
MW-2	05/17/16	L836879-02	<0.001	<0.005	<0.001	<0.003	
MW-2	09/19/16	L860929-02	<0.001	<0.005	<0.001	<0.003	
MW-2	12/14/16	L879216-02	<0.001	<0.001	<0.001	<0.003	
MW-2	02/28/17	L893439-02	<0.001	<0.001	<0.001	<0.003	
MW-2	05/08/17	L908717-02	<0.001	<0.001	<0.001	<0.003	
MW-2	09/15/17	L936891-02	<0.001	<0.001	<0.001	<0.003	
MW-2	11/29/17	L954383-02	<0.001	<0.001	<0.001	<0.003	
MW-2	03/07/18	L976397-02	<0.001	<0.001	<0.001	<0.003	
MW-2	06/12/18	L1001691-02	<0.001	<0.001	<0.001	<0.003	
MW-2	09/05/18	L1023536-02	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
MW-2	11/28/18	L1048614-02	<0.001	<0.001	<0.001	<0.003	
MW-2	02/12/19	L1069996-02	<0.001	<0.001	<0.001	<0.003	
MW-2	05/08/19	L1097774-02	<0.001	0.00488	<0.001	<0.003	
MW-2	08/22/19	L1132369-02	<0.001	<0.001	<0.001	<0.003	
MW-2	11/06/19	L1158995-02	<0.001	<0.001	<0.001	<0.003	
MW-3	03/29/06	T 13036-3	**0.0129**	0.0089	0.0021	0.0038	
MW-3	06/10/06	T13862-3	0.0075	0.0043	0.00071 J	0.002	
MW-3	09/12/06	T14676-3	0.0023	<0.00020	<0.00033	<0.00036	
MW-3	12/06/06	T15618-3	0.0021	0.00077 J	<0.00033	<0.00036	
MW-3	02/28/07	T16494-3	0.0078	0.0026	0.00061	0.0024 J	
MW-3	05/30/07	T17645-3	<0.00021	<0.00023	<0.00035	<0.00055	
MW-3	09/06/07	T18811-3	<0.00021	<0.00023	<0.00035	<0.00055	
MW-3	11/13/07	T19737-3	<0.001	<0.001	<0.001	<0.003	
MW-3	02/26/08	T21028-3	<0.00021	<0.00023	<0.00035	<0.00055	
MW-3	05/28/08	T22367-3	<0.00021	<0.00023	<0.00035	<0.00055	
MW-3	08/18/08	T23538-3	0.0019	<0.0005	<0.0005	<0.0005	
MW-3	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100	
MW-3	02/17/09	187730	<0.00100	<0.00100	<0.00100	<0.00100	
MW-3	05/19/09	196552	0.0011	<0.000281	<0.000535	<0.000960	
MW-3	08/26/09	208327	<0.000149	<0.000188	<0.000178	<0.000163	
MW-3	11/18/09	215415	<0.000160	<0.000332	<0.000230	<0.000143	
MW-3	02/11/10	222483	<0.000371	<0.0004	<0.00043	<0.000379	
MW-3	08/26/10	1008909-03	<0.001	<0.001	<0.001	<0.003	
MW-3	11/18/10	1011749-03	<0.001	<0.001	<0.001	<0.003	
MW-3	02/23/11	1102701-06	<0.001	<0.001	<0.001	<0.003	
MW-3	06/01/11	1106050-03	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			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-3	08/30/11	11081008-03	<0.001	<0.001	<0.001	<0.003	
MW-3	11/28/11	1111901-03	<0.001	<0.001	<0.001	<0.003	
MW-3	02/22/12	1202864-03	<0.001	<0.001	<0.001	<0.003	
MW-3	05/22/12	12051078-03	<0.001	<0.001	<0.001	<0.003	
MW-3	09/11/12	1209475-03	<0.001	<0.001	<0.001	<0.003	
MW-3	11/26/12	1211904-02	<0.001	<0.001	<0.001	<0.003	
MW-3	02/27/13	L622455-03	<0.001	<0.005	<0.001	<0.003	
MW-3	06/11/13	L641163-03	<0.001	<0.005	<0.001	<0.003	
MW-3	09/10/13	L656835-03	<0.001	<0.005	<0.001	<0.003	
MW-3	11/07/13	L667856-03	<0.001	<0.005	<0.001	<0.003	
MW-3	03/05/14	L686955-03	<0.001	<0.005	<0.001	<0.003	
MW-3	06/03/14	L703477-03	<0.001	<0.005	<0.001	<0.003	
MW-3	09/17/14	L722791-03	<0.001	<0.005	<0.001	<0.003	
MW-3	11/12/14	L733897-03	<0.001	<0.005	<0.001	<0.003	
MW-3	02/25/15	L750722-03	<0.001	<0.005	<0.001	<0.003	
MW-3	06/16/15	L772255-03	<0.001	<0.005	<0.001	<0.003	
MW-3	08/26/15	L785959-03	<0.001	<0.005	<0.001	<0.003	
MW-3	11/17/15	L802523-03	<0.001	<0.005	<0.001	<0.003	
MW-3	03/08/16	L822589-03	<0.001	<0.005	<0.001	<0.003	
MW-3	05/17/16	L836879-03	<0.001	<0.005	<0.001	<0.003	
MW-3	09/19/16	L860929-03	<0.001	<0.005	<0.001	<0.003	
MW-3	12/14/16	L879216-03	<0.001	<0.001	<0.001	<0.003	
MW-3	02/28/17	L893439-03	<0.001	<0.001	<0.001	<0.003	
MW-3	05/08/17	L908717-03	<0.001	<0.001	<0.001	<0.003	
MW-3	09/15/17	L936891-03	<0.001	<0.001	<0.001	<0.003	
MW-3	11/29/17	L954383-03	<0.001	<0.001	<0.001	<0.003	
MW-3	03/07/18	L976397-03	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			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-3	06/12/18	L1001691-03	<0.001	<0.001	<0.001	<0.003	
MW-3	09/05/18	L1023536-03	<0.001	<0.001	<0.001	<0.003	
MW-3	11/28/18	L1048614-03	<0.001	<0.001	<0.001	<0.003	
MW-3	02/12/19	L1069996-03	<0.001	<0.001	<0.001	<0.003	
MW-3	05/08/19	L1097774-03	<0.001	<0.001	<0.001	<0.003	
MW-3	08/22/19	L1132369-03	<0.001	<0.001	<0.001	<0.003	
MW-3	11/06/19	L1158995-03	<0.001	<0.001	<0.001	<0.003	
MW-4	12/06/06	T15618-4	<0.00035	<0.00020	<0.00033	<0.00036	
MW-4	02/28/07	T16494-4	<0.00035	<0.00020	<0.00033	<0.00036	
MW-4	05/30/07	T17645-4	<0.00021	<0.00023	<0.00035	<0.00055	
MW-4	09/06/07	T18811-4	<0.00021	<0.00023	<0.00035	<0.00055	
MW-4	11/13/07	T19737-4	<0.001	<0.001	<0.001	<0.003	
MW-4	02/26/08	T21028-4	0.00086 J	<0.00023	<0.00035	<0.00055	
MW-4	05/28/08	T22367-4	<0.00021	<0.00023	<0.00035	<0.00055	
MW-4	08/18/08	T23538-4	<0.0005	<0.0005	<0.0005	<0.001	
MW-4	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100	
MW-4	02/17/09	187731	<0.00100	<0.00100	<0.00100	<0.00100	
MW-4	05/19/09	196553	<0.000133	<0.000281	<0.000535	<0.000960	
MW-4	08/26/09	208328	<0.000149	<0.000188	<0.000178	<0.000163	
MW-4	11/18/09	215416	<0.000160	<0.000332	<0.000230	<0.000143	
MW-4	02/11/10	222484	<0.000371	<0.0004	<0.00043	<0.000379	
MW-4	05/12/10	1005475-04	<0.001	<0.001	<0.001	<0.003	
MW-4	08/26/10	1008909-04	<0.001	<0.001	<0.001	<0.003	
MW-4	11/18/10	1011749-04	<0.001	<0.001	<0.001	<0.003	
MW-4	02/23/11	1102701-07	<0.001	<0.001	<0.001	<0.003	
MW-4	06/01/11	1106050-04	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			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	08/30/11	11081008-04	<0.001	<0.001	<0.001	<0.003	
MW-4	11/28/11	1111901-04	<0.001	<0.001	<0.001	<0.003	
MW-4	02/22/12	1202864-04	<0.001	<0.001	<0.001	<0.003	
MW-4	05/22/12	12051078-04	<0.001	<0.001	<0.001	<0.003	
MW-4	09/11/12	1209475-04	<0.001	<0.001	<0.001	<0.003	
MW-4	11/26/12	1211904-04	<0.001	<0.001	<0.001	<0.003	
MW-4	02/27/13	L622455-04	<0.001	<0.005	<0.001	<0.003	
MW-4	06/11/13	L641163-04	<0.001	<0.005	<0.001	<0.003	
MW-4	09/10/13	L656835-04	<0.001	<0.005	<0.001	<0.003	
MW-4	11/07/13	L667856-04	<0.001	<0.005	<0.001	<0.003	
MW-4	03/05/14	L686955-04	<0.001	<0.005	<0.001	<0.003	
MW-4	06/03/14	L703477-04	<0.001	<0.005	<0.001	<0.003	
MW-4	09/17/14	L722791-04	<0.001	<0.005	<0.001	<0.003	
MW-4	11/12/14	L733897-04	<0.001	<0.005	<0.001	<0.003	
MW-4	02/25/15	L750722-04	<0.001	<0.005	<0.001	<0.003	
MW-4	06/16/15	L772255-04	<0.001	<0.005	<0.001	<0.003	
MW-4	08/26/15	L785959-04	<0.001	<0.005	<0.001	<0.003	
MW-4	11/17/15	L802523-04	<0.001	<0.005	<0.001	<0.003	
MW-4	03/08/16	L822589-04	<0.001	<0.005	<0.001	<0.003	
MW-4	05/17/16	L836879-04	<0.001	<0.005	<0.001	<0.003	
MW-4	09/19/16	L860929-04	<0.001	<0.005	<0.001	<0.003	
MW-4	12/14/16	L879216-04	<0.001	<0.001	<0.001	<0.003	
MW-4	02/28/17	L893439-04	<0.001	<0.001	<0.001	<0.003	
MW-4	05/08/17	L908717-04	<0.001	<0.001	<0.001	<0.003	
MW-4	09/15/17	L936891-04	<0.001	<0.001	<0.001	<0.003	
MW-4	11/29/17	L954383-04	<0.001	<0.001	<0.001	<0.003	
MW-4	03/07/18	L976397-04	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			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	06/12/18	L1001691-04	<0.001	<0.001	<0.001	<0.003	
MW-4	09/05/18	L1023536-04	<0.001	<0.001	<0.001	<0.003	
MW-4	11/28/18	L1048614-04	<0.001	<0.001	<0.001	<0.003	
MW-4	02/12/19	L1069996-04	<0.001	<0.001	<0.001	<0.003	
MW-4	05/08/19	L1097774-04	<0.001	0.00479	<0.001	<0.003	
MW-4	08/22/19	L1132369-04	<0.001	<0.001	<0.001	<0.003	
MW-4	11/06/19	L1158995-04	<0.001	<0.001	<0.001	<0.003	
MW-5	12/06/06	T15618-5	0.00055 J	<0.00020	<0.00033	<0.00036	
MW-5	02/28/07	T16494-5	<0.00035	<0.00020	<0.00033	<0.00036	
MW-5	05/30/07	T17645-5	<0.00021	<0.00023	<0.00035	<0.00055	
MW-5	09/06/07	T18811-5	<0.00021	<0.00023	<0.00035	<0.00055	
MW-5	11/13/07	T19737-5	<0.001	<0.001	<0.001	<0.003	
MW-5	02/26/08	T21028-5	<0.00021	<0.00023	<0.00035	<0.00055	
MW-5	05/28/08	T22367-5	<0.00021	<0.00023	<0.00035	<0.00055	
MW-5	08/18/08	T23538-5	<0.0005	<0.0005	<0.0005	<0.001	
MW-5	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100	
MW-5	02/17/09	187732	<0.00100	<0.00100	<0.00100	<0.00100	
MW-5	05/19/09	196554	<0.000133	<0.000281	<0.000535	<0.000960	
MW-5	08/26/09	208329	<0.000149	<0.000188	<0.000178	<0.000163	
MW-5	11/18/09	215417	<0.000160	<0.000332	<0.000230	<0.000143	
MW-5	02/11/10	222485	<0.000371	<0.0004	<0.00043	<0.000379	
MW-5	05/12/10	1005475-05	<0.001	<0.001	<0.001	<0.003	
MW-5	08/26/10	1008909-05	<0.001	<0.001	<0.001	<0.003	
MW-5	11/18/10	1011749-05	<0.001	<0.001	<0.001	<0.003	
MW-5	02/23/11	1102701-08	<0.001	<0.001	<0.001	<0.003	
MW-5	06/01/11	1106050-05	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			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-5	08/30/11	11081008-05	<0.001	<0.001	<0.001	<0.003	
MW-5	11/28/11	1111901-05	<0.001	<0.001	<0.001	<0.003	
MW-5	02/22/12	1202864-05	<0.001	<0.001	<0.001	<0.003	
MW-5	05/22/12	12051078-05	<0.001	<0.001	<0.001	<0.003	
MW-5	09/11/12	1209475-05	<0.001	<0.001	<0.001	<0.003	
MW-5	11/26/12	1211904-05	<0.001	<0.001	<0.001	<0.003	
MW-5	02/27/13	L622455-05	<0.001	<0.005	<0.001	<0.003	
MW-5	06/11/13	L641163-05	<0.001	<0.005	<0.001	<0.003	
MW-5	09/10/13	L656835-05	<0.001	<0.005	<0.001	<0.003	
MW-5	11/07/13	L667856-05	<0.001	<0.005	<0.001	<0.003	
MW-5	03/05/14	L686955-05	<0.001	<0.005	<0.001	<0.003	
MW-5	06/03/14	L703477-05	<0.001	<0.005	<0.001	<0.003	
MW-5	09/17/14	L722791-05	<0.001	<0.005	0.019	0.0033	
MW-5	11/12/14	L733897-05	<0.001	<0.005	<0.001	<0.003	
MW-5	02/25/15	L750722-05	<0.001	<0.005	<0.001	<0.003	
MW-5	06/16/15	L772255-05	<0.001	<0.005	<0.001	<0.003	
MW-5	08/26/15	L785959-05	<0.001	<0.005	<0.001	<0.003	
MW-5	11/17/15	L802523-05	<0.001	<0.005	<0.001	<0.003	
MW-5	03/08/16	L822589-05	<0.001	<0.005	<0.001	<0.003	
MW-5	05/17/16	L836879-05	<0.001	<0.005	<0.001	<0.003	
MW-5	09/19/16	L860929-05	<0.001	<0.005	<0.001	<0.003	
MW-5	12/14/16	L879216-05	<0.001	<0.001	<0.001	<0.003	
MW-5	02/28/17	L893439-05	<0.001	<0.001	<0.001	<0.003	
MW-5	05/09/17	L908717-05	<0.001	<0.001	<0.001	<0.003	
MW-5	09/15/17	L936891-05	<0.001	<0.001	<0.001	<0.003	
MW-5	11/29/17	L954383-05	<0.001	<0.001	<0.001	<0.003	
MW-5	03/07/18	L976397-05	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			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-5	06/12/18	L1001691-05	<0.001	<0.001	<0.001	<0.003	
MW-5	09/05/18	L1023536-05	<0.001	<0.001	<0.001	<0.003	
MW-5	11/28/18	L1048614-05	<0.001	<0.001	<0.001	<0.003	
MW-5	02/12/19	L1069996-05	<0.001	<0.001	<0.001	<0.003	
MW-5	05/08/19	L1097774-05	<0.001	<0.001	<0.001	<0.003	
MW-5	08/22/19	L1132369-05	<0.001	<0.001	<0.001	<0.003	
MW-5	11/06/19	L1158995-05	<0.001	<0.001	<0.001	<0.003	
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	8112008	<0.00100	<0.00100	<0.00100	<0.00100	
MW-6	02/17/09	187733	<0.00100	<0.00100	<0.00100	<0.00100	
MW-6	05/19/09	196555	<0.000133	<0.000281	<0.000535	<0.000960	
MW-6	08/26/09	208330	<0.000149	<0.000188	<0.000178	<0.000163	
MW-6	11/18/09	215418	<0.000160	<0.000332	<0.000230	<0.000143	
MW-6	02/11/10	222486	<0.000371	<0.0004	<0.00043	<0.000379	
MW-6	05/12/10	1005475-06	<0.001	<0.001	<0.001	<0.003	
MW-6	08/26/10	1008909-06	<0.001	<0.001	<0.001	<0.003	
MW-6	11/18/10	1011749-06	<0.001	<0.001	<0.001	<0.003	
MW-6	02/23/11	1102701-09	<0.001	<0.001	<0.001	<0.003	
MW-6	06/01/11	1106050-06	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
MW-6	08/30/11	11081008-06	<0.001	<0.001	<0.001	<0.003	
MW-6	11/28/11	1111901-06	<0.001	<0.001	<0.001	<0.003	
MW-6	02/22/12	1202864-06	<0.001	<0.001	<0.001	<0.003	
MW-6	05/22/12	12051078-06	<0.001	<0.001	<0.001	<0.003	
MW-6	09/11/12	1209475-06	<0.001	<0.001	<0.001	<0.003	
MW-6	11/26/12	1211904-06	<0.001	<0.001	<0.001	<0.003	
MW-6	02/27/13	L622455-06	<0.001	<0.005	<0.001	<0.003	
MW-6	06/11/13	L641163-06	<0.001	<0.005	<0.001	<0.003	
MW-6	09/10/13	L656835-06	<0.001	<0.005	<0.001	<0.003	
MW-6	11/07/13	L667856-06	<0.001	<0.005	<0.001	<0.003	
MW-6	03/05/14	L686955-06	<0.001	<0.005	<0.001	<0.003	
MW-6	06/03/14	L703477-06	<0.001	<0.005	<0.001	<0.003	
MW-6	09/17/14	L722791-06	<0.001	<0.005	<0.001	<0.003	
MW-6	11/12/14	L733897-06	<0.001	<0.005	<0.001	<0.003	
MW-6	02/25/15	L750722-06	<0.001	<0.005	<0.001	<0.003	
MW-6	06/16/15	L772255-06	<0.001	<0.005	<0.001	<0.003	
MW-6	08/26/15	L785959-06	<0.001	<0.005	<0.001	<0.003	
MW-6	11/17/15	L802523-06	<0.001	<0.005	<0.001	<0.003	
MW-6	03/08/16	L822589-06	<0.001	<0.005	<0.001	<0.003	
MW-6	05/17/16	L836879-06	<0.001	<0.005	<0.001	<0.003	
MW-6	09/19/16	L860929-06	<0.001	<0.005	<0.001	<0.003	
MW-6	12/14/16	L879216-06	<0.001	<0.001	<0.001	<0.003	
MW-6	02/28/17	L893439-06	<0.001	<0.001	<0.001	<0.003	
MW-6	05/09/17	L908717-06	<0.001	<0.001	<0.001	<0.003	
MW-6	09/15/17	L936891-06	<0.001	<0.001	<0.001	<0.003	
MW-6	11/29/17	L954383-06	<0.001	<0.001	<0.001	<0.003	
MW-6	03/07/18	L976397-06	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
MW-6	06/12/18	L1001691-06	<0.001	<0.001	<0.001	<0.003	
MW-6	09/05/18	L1023536-06	<0.001	<0.001	<0.001	<0.003	
MW-6	11/28/18	L1048614-06	<0.001	<0.001	<0.001	<0.003	
MW-6	02/12/19	L1069996-06	<0.001	<0.001	<0.001	<0.003	
MW-6	05/08/19	L1097774-06	<0.001	<0.001	<0.001	<0.003	
MW-6	08/22/19	L1132369-06	<0.001	<0.001	<0.001	<0.003	
MW-6	11/06/19	L1158995-06	<0.001	<0.001	<0.001	<0.003	
MW-7	12/06/06	T15618-7	<0.00035	<0.00020	<0.00033	<0.00036	
MW-7	02/28/07	T16494-7	**0.0114**	<0.00020	<0.00033	<0.00036	
MW-7	05/30/07	T17645-7	0.0049	<0.00023	<0.00035	<0.00055	
MW-7	09/06/07	T18811-7	0.00073 J	<0.00023	<0.00035	<0.00055	
MW-7	11/13/07	T19737-7	<0.001	<0.001	<0.001	<0.003	
MW-7	02/26/08	T21028-7	<0.00021	<0.00023	<0.00035	<0.00055	
MW-7	05/28/08	T22367-7	0.00053 J	<0.00023	<0.00035	<0.00055	
MW-7	08/18/08	T23538-7	<0.0005	<0.0005	<0.0005	<0.001	
MW-7	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100	
MW-7	02/17/09	187734	<0.00100	<0.00100	<0.00100	<0.00100	
MW-7	05/19/09	196556	<0.000133	<0.000281	<0.000535	<0.000960	
MW-7	08/26/09	208331	<0.000149	<0.000188	<0.000178	<0.000163	
MW-7	11/18/09	215419	<0.000160	<0.000332	<0.000230	<0.000143	
MW-7	02/11/10	222487	<0.000371	<0.0004	<0.00043	<0.000379	
MW-7	05/12/10	1005475-07	<0.001	<0.001	<0.001	<0.003	
MW-7	08/26/10	1008909-07	<0.001	<0.001	<0.001	<0.003	
MW-7	11/18/10	1011749-07	<0.001	<0.001	<0.001	<0.003	
MW-7	02/23/11	1102701-10	<0.001	<0.001	<0.001	<0.003	
MW-7	06/01/11	1106050-07	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			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	08/30/11	11081008-07	<0.001	<0.001	<0.001	<0.003	
MW-7	11/28/11	1111901-07	<0.001	<0.001	<0.001	<0.003	
MW-7	02/22/12	1202864-07	<0.001	<0.001	<0.001	<0.003	
MW-7	05/22/12	12051078-07	<0.001	<0.001	<0.001	<0.003	
MW-7	09/11/12	1209475-07	<0.001	<0.001	<0.001	<0.003	
MW-7	11/26/12	1211904-07	<0.001	<0.001	<0.001	<0.003	
MW-7	02/27/13	L622455-07	<0.001	<0.005	<0.001	<0.003	
MW-7	06/11/13	L641163-07	<0.001	<0.005	<0.001	<0.003	
MW-7	09/10/13	L656835-07	<0.001	<0.005	<0.001	<0.003	
MW-7	11/07/13	L667856-07	<0.001	<0.005	<0.001	<0.003	
MW-7	03/05/14	L686955-07	<0.001	<0.005	<0.001	<0.003	
MW-7	06/03/14	L703477-07	<0.001	<0.005	<0.001	<0.003	
MW-7	09/17/14	L722791-07	0.0012	<0.005	<0.001	<0.003	
MW-7	11/12/14	L733897-07	<0.001	<0.005	<0.001	<0.003	
MW-7	02/25/15	L750722-07	<0.001	<0.005	<0.001	<0.003	
MW-7	06/16/15	L772255-07	<0.001	<0.005	<0.001	<0.003	
MW-7	08/26/15	L785959-07	<0.001	<0.005	<0.001	<0.003	
MW-7	11/17/15	L802523-07	<0.001	<0.005	<0.001	<0.003	
MW-7	03/08/16	L822589-07	<0.001	<0.005	<0.001	<0.003	
MW-7	05/17/16	L836879-07	<0.001	<0.005	<0.001	<0.003	
MW-7	09/19/16	L860929-07	<0.001	<0.005	<0.001	<0.003	
MW-7	12/14/16	L879216-07	<0.001	<0.001	<0.001	<0.003	
MW-7	02/28/17	L893439-07	<0.001	<0.001	<0.001	<0.003	
MW-7	05/08/17	L908717-07	<0.001	<0.001	<0.001	<0.003	
MW-7	09/15/17	L936891-07	<0.001	<0.001	<0.001	<0.003	
MW-7	11/29/17	L954383-07	<0.001	<0.001	<0.001	<0.003	
MW-7	03/07/18	L976397-07	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			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	06/12/18	L1001691-07	<0.001	<0.001	<0.001	<0.003	
MW-7	09/05/18	L1023536-07	<0.001	<0.001	<0.001	<0.003	
MW-7	11/28/18	L1048614-07	<0.001	<0.001	<0.001	<0.003	
MW-7	02/12/19	L1069996-07	<0.001	<0.001	<0.001	<0.003	
MW-7	05/08/19	L1097774-07	<0.001	0.00461	<0.001	<0.003	
MW-7	08/22/19	L1132369-07	<0.001	<0.001	<0.001	<0.003	
MW-7	11/06/19	L1158995-07	<0.001	<0.001	<0.001	<0.003	
RW-1	06/01/11	1106050-08	**0.066**	0.016	0.057	0.18	
RW-1	05/22/12	12051078-08	**0.11**	0.066	0.077	0.36	
RW-1	06/11/13	L641163-08	**0.015**	0.0045 J	0.068	0.2	
RW-1	06/03/14	L703477-08	**0.19**	0.024	0.16	0.43	
RW-1	06/16/15	L772255-08	**0.15**	0.0085 J	0.12	0.31	
RW-1	05/17/16	L836879-08	**0.0606**	0.00105 J	0.0335	0.0968	
RW-1	05/09/17	L908717-08	**0.018**	0.00107	0.0313	0.0808	
RW-1	06/12/18	L1001691-08	**0.0288**	<0.001	0.119	0.395	
RW-1	05/08/19	L1097774-08	**0.0110**	<0.005	0.109	0.162	
RW-1	11/06/19	L1158995-08	<0.005	<0.005	0.0245	0.0928	
RW-2	06/01/11	1106050-09	**0.034**	0.038	0.051	0.14	
RW-2	05/22/12	12051078-09	**0.19**	0.2	0.18	0.49	
RW-2	06/11/13	L641163-09	**0.028**	0.04	0.063	0.18	
RW-2	06/03/14	L703477-09	**0.03**	0.04	0.063	0.16	
RW-2	06/16/15	L772255-09	0.0055	0.0067 J	0.0078	0.017	
RW-2	05/17/16	L836879-09	**0.0176**	0.0151	0.029	0.0695	
RW-2	05/09/17	L908717-09	**0.0829**	0.135	0.331	0.562	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
RW-2	06/13/18	L1001691-09	0.00586	0.00719	0.0164	0.0424	
RW-2	05/08/19	L1097774-09	**0.0438**	0.0380	0.174	0.441	
RW-3	06/01/11	110650-10	**0.21**	0.2	0.18	0.39	
RW-3	05/22/12	12051078-10	**0.31**	0.66	0.56	**1.1**	
RW-3	06/11/13	L641163-10	**0.016**	0.078	0.14	0.32	
RW-3	06/03/14	L703477-10	**0.026**	0.015 J	0.11	0.31	
RW-3	06/16/15	L772255-10	**0.019**	0.0046 J	0.09	0.37	
RW-3	05/17/16	L836879-10	**0.0142**	0.0163	0.0375	0.0965	
RW-3	05/09/17	L908717-10	**0.0196**	0.00222	0.0897	0.16	
RW-3	06/12/18	L1001691-10	**0.0505**	0.00191	0.476	**0.763**	
RW-3	05/08/19	L1097774-10	<0.005	0.00685	0.142	0.373	
RW-4	12/06/06	T15618-8	0.00099 J	0.00035 J	<0.00033	<0.00036	
RW-4	02/28/07	T16494-8	<0.00035	<0.00020	<0.00033	<0.00036	
RW-4	05/30/07	T17645-8	<0.00021	<0.00023	<0.00035	<0.00055	
RW-4	09/06/07	T18811-8	<0.00021	<0.00023	<0.00035	<0.00055	
RW-4	11/13/07	T19737-8	<0.001	<0.001	<0.001	<0.003	
RW-4	02/26/08	T21028-8	<0.00021	<0.00023	<0.00035	<0.00055	
RW-4	05/28/08	T22367-11	<0.00021	<0.00023	<0.00035	<0.00055	
RW-4	08/18/08	T23538-8	<0.0005	<0.0005	<0.0005	<0.001	
RW-4	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100	
RW-4	02/17/09	187735	<0.00100	<0.00100	<0.00100	<0.00100	
RW-4	05/19/09	196560	<0.000133	<0.000281	<0.000535	<0.000960	
RW-4	08/26/09	208332	<0.000149	<0.000188	<0.000178	<0.000163	
RW-4	11/18/09	215420	<0.000160	<0.000332	<0.000230	<0.000143	
RW-4	02/11/10	222488	<0.000371	<0.0004	<0.00043	<0.000379	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
RW-4	05/12/10	1005475-11	<0.001	<0.001	<0.001	<0.003	
RW-4	08/26/10	1008909-08	<0.001	<0.001	<0.001	<0.003	
RW-4	11/18/10	1011749-08	<0.001	<0.001	<0.001	<0.003	
RW-4	02/23/11	1102701-01	<0.001	<0.001	<0.001	<0.003	
RW-4	06/01/11	1106050-11	<0.001	<0.001	<0.001	<0.003	
RW-4	08/30/11	11081008-08	<0.001	<0.001	<0.001	<0.003	
RW-4	11/28/11	1111901-08	<0.001	<0.001	<0.001	<0.003	
RW-4	02/22/12	1202864-08	<0.001	<0.001	<0.001	<0.003	
RW-4	05/22/12	12051078-11	<0.001	<0.001	<0.001	<0.003	
RW-4	09/11/12	1209475-08	<0.001	<0.001	<0.001	<0.003	
RW-4	11/26/12	1211904-08	<0.001	<0.001	<0.001	<0.003	
RW-4	02/27/13	L622455-08	<0.001	<0.005	<0.001	<0.003	
RW-4	06/11/13	L641163-11	<0.001	<0.005	<0.001	<0.003	
RW-4	09/10/13	L656835-08	<0.001	<0.005	<0.001	<0.003	
RW-4	11/07/13	L667856-08	<0.001	<0.005	<0.001	<0.003	
RW-4	03/05/14	L686955-08	<0.001	<0.005	<0.001	<0.003	
RW-4	06/03/14	L703477-11	<0.001	<0.005	<0.001	<0.003	
RW-4	09/17/14	L722791-08	<0.001	<0.005	<0.001	<0.003	
RW-4	11/12/14	L733897-08	<0.001	<0.005	<0.001	<0.003	
RW-4	02/25/15	L750722-08	<0.001	<0.005	<0.001	<0.003	
RW-4	06/16/15	L772255-11	<0.001	<0.005	<0.001	<0.003	
RW-4	08/26/15	L785959-08	<0.001	<0.005	<0.001	<0.003	
RW-4	08/26/15	L785959-08	<0.001	<0.005	<0.001	<0.003	
RW-4	03/08/16	L822589-08	<0.001	<0.005	<0.001	<0.003	
RW-4	05/17/16	L836879-11	<0.001	<0.005	<0.001	<0.003	
RW-4	09/19/16	L860929-08	<0.001	<0.005	<0.001	<0.003	
RW-4	12/14/16	L879214-01	<0.001	<0.001	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
RW-4	02/28/17	L893439-08	<0.001	<0.001	<0.001	<0.003	
RW-4	05/08/17	L908717-11	<0.001	<0.001	<0.001	<0.003	
RW-4	09/15/17	L936890-01	<0.001	<0.001	<0.001	<0.003	
RW-4	11/29/17	L954383-08	<0.001	<0.001	<0.001	<0.003	
RW-4	03/07/18	L976397-08	<0.001	<0.001	<0.001	<0.003	
RW-4	06/13/18	L1001691-11	<0.001	<0.001	<0.001	<0.003	
RW-4	09/05/18	L1023536-08	<0.001	<0.001	<0.001	<0.003	
RW-4	11/28/18	L1048614-08	<0.001	<0.001	<0.001	<0.003	
RW-4	02/12/19	L1069996-08	<0.001	<0.001	<0.001	<0.003	
RW-4	05/08/19	L1097774-15	<0.001	<0.001	<0.001	<0.003	
RW-4	08/22/19	L1132369-08	<0.001	<0.001	<0.001	<0.003	
RW-4	11/06/19	L1158995-09	<0.001	<0.001	<0.001	<0.003	
RW-5	12/06/06	T15618-9	0.0035	0.00095 J	0.00043 J	<0.00036	
RW-5	02/28/07	T16494-9	**0.0193**	0.0038	0.0015	0.0014 J	
RW-5	05/30/07	T17645-9	0.0045	0.0011	0.00066 J	0.00056 J	
RW-5	09/06/07	T18811-9	0.0012	<0.00023	<0.00035	<0.00055	
RW-5	11/13/07	T19737-9	0.0024	<0.001	<0.001	<0.003	
RW-5	02/26/08	T21028-9	<0.00021	<0.00023	<0.00035	<0.00055	
RW-5	05/28/08	T22367-12	0.00045 J	<0.00023	<0.00035	<0.00055	
RW-5	08/18/08	T23538-9	<0.0005	<0.0005	<0.0005	<0.001	
RW-5	11/19/08	8112008	0.00260	<0.00100	<0.00100	<0.00100	
RW-5	02/17/09	187736	0.0048	<0.00100	<0.00100	<0.00100	
RW-5	05/19/09	196561	0.0003 J	<0.000281	<0.000535	0.0016	
RW-5	08/26/09	208333	0.0024	<0.000281	<0.000535	<0.000960	
RW-5	11/18/09	215421	0.0008 J	<0.000332	<0.000230	<0.000143	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
RW-5	02/11/10	222489	<0.000371	<0.0004	<0.00043	<0.000379	
RW-5	05/12/10	1005475-12	<0.001	<0.001	<0.001	<0.003	
RW-5	08/26/10	1008909-09	<0.001	<0.001	<0.001	<0.003	
RW-5	11/18/10	1011749-09	<0.001	<0.001	<0.001	<0.003	
RW-5	02/23/11	1102701-02	<0.001	<0.001	<0.001	<0.003	
RW-5	06/01/11	1106050-12	<0.001	<0.001	<0.001	<0.003	
RW-5	08/30/11	11081008-09	<0.001	<0.001	<0.001	<0.003	
RW-5	11/28/11	1111901-09	<0.001	<0.001	<0.001	<0.003	
RW-5	02/22/12	1202864-09	<0.001	<0.001	<0.001	<0.003	
RW-5	05/22/12	12051078-12	<0.001	<0.001	<0.001	<0.003	
RW-5	09/11/12	1209475-09	<0.001	<0.001	<0.001	<0.003	
RW-5	11/26/12	1211904-09	<0.001	<0.001	<0.001	<0.003	
RW-5	02/27/13	L622455-09	<0.001	<0.005	<0.001	<0.003	
RW-5	06/11/13	L641163-12	<0.001	<0.005	<0.001	<0.003	
RW-5	09/10/13	L656835-09	<0.001	<0.005	<0.001	<0.003	
RW-5	11/07/13	L667856-09	<0.001	<0.005	<0.001	<0.003	
RW-5	03/05/14	L686955-09	<0.001	<0.005	<0.001	<0.003	
RW-5	06/03/14	L703477-12	<0.001	<0.005	<0.001	<0.003	
RW-5	09/17/14	L722791-09	<0.001	<0.005	<0.001	<0.003	
RW-5	11/12/14	L733897-09	<0.001	<0.005	<0.001	<0.003	
RW-5	02/25/15	L750722-09	<0.001	<0.005	<0.001	<0.003	
RW-5	06/16/15	L772255-12	<0.001	<0.005	<0.001	<0.003	
RW-5	08/26/15	L785959-09	<0.001	<0.005	<0.001	<0.003	
RW-5	11/17/15	L802523-09	<0.001	<0.005	<0.001	<0.003	
RW-5	03/08/16	L822589-09	<0.001	<0.005	<0.001	<0.003	
RW-5	05/17/16	L836879-12	<0.001	<0.005	<0.001	<0.003	
RW-5	09/19/16	L860929-09	<0.001	<0.005	<0.001	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
RW-5	12/14/16	L879214-02	<0.001	<0.001	<0.001	<0.003	
RW-5	02/28/17	L893439-09	<0.001	<0.001	<0.001	<0.003	
RW-5	05/08/17	L908717-12	<0.001	<0.001	<0.001	<0.003	
RW-5	09/15/17	L936890-02	<0.001	<0.001	<0.001	<0.003	
RW-5	11/29/17	L954383-09	<0.001	<0.001	<0.001	<0.003	
RW-5	03/07/18	L976397-09	<0.001	<0.001	<0.001	<0.003	
RW-5	06/13/18	L1001691-12	<0.001	<0.001	<0.001	<0.003	
RW-5	09/05/18	L1023536-09	<0.001	<0.001	<0.001	<0.003	
RW-5	11/28/18	L1048614-09	<0.001	<0.001	<0.001	<0.003	
RW-5	02/12/19	L1069996-09	<0.001	<0.001	<0.001	<0.003	
RW-5	05/08/19	L1097774-11	<0.001	<0.001	<0.001	<0.003	
RW-5	08/22/19	L1132369-09	<0.001	<0.001	<0.001	<0.003	
RW-5	11/06/19	L1158995-10	<0.001	<0.001	<0.001	<0.003	
RW-6	12/06/06	T15618-10	<0.00035	<0.00020	<0.00033	<0.00036	
RW-6	02/28/07	T16494-10	<0.00035	<0.00020	<0.00033	<0.00036	
RW-6	05/30/07	T17645-10	<0.00021	<0.00023	<0.00035	<0.00055	
RW-6	09/06/07	T18811-10	<0.00021	<0.00023	<0.00035	<0.00055	
RW-6	11/13/07	T19737-10	<0.001	<0.001	<0.001	<0.003	
RW-6	02/26/08	T21028-10	<0.00021	<0.00023	<0.00035	<0.00055	
RW-6	05/28/08	T22367-13	<0.00021	<0.00023	<0.00035	<0.00055	
RW-6	08/18/08	T23538-10	<0.0005	<0.0005	<0.0005	<0.001	
RW-6	11/19/08	8112008	<0.00100	<0.00100	<0.00100	<0.00100	
RW-6	02/17/09	187737	<0.00100	<0.00100	<0.00100	<0.00100	
RW-6	05/19/09	196562	0.0008 J	<0.000281	<0.000535	<0.000960	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
RW-6	08/26/09	208334	0.0002 J	<0.000281	<0.000535	<0.000960	
RW-6	11/18/09	215422	<0.000160	<0.000332	<0.000230	<0.000143	
RW-6	02/11/10	222490	<0.000371	<0.0004	<0.00043	<0.000379	
RW-6	05/12/10	1005475-13	<0.001	<0.001	<0.001	<0.003	
RW-6	08/26/10	1008909-10	<0.001	<0.001	<0.001	<0.003	
RW-6	11/18/10	1011749-10	<0.001	<0.001	<0.001	<0.003	
RW-6	02/23/11	1102701-03	<0.001	<0.001	<0.001	<0.003	
RW-6	06/01/11	1106050-13	<0.001	<0.001	<0.001	<0.003	
RW-6	08/30/11	11081008-10	<0.001	<0.001	<0.001	<0.003	
RW-6	11/28/11	1111901-10	<0.001	<0.001	<0.001	<0.003	
RW-6	02/22/12	1202864-10	<0.001	<0.001	<0.001	<0.003	
RW-6	05/22/12	12051078-13	<0.001	<0.001	<0.001	<0.003	
RW-6	09/11/12	1209475-09	<0.001	<0.001	<0.001	<0.003	
RW-6	11/26/12	1211904-10	<0.001	<0.001	<0.001	<0.003	
RW-6	02/27/13	L622455-10	<0.001	<0.005	<0.001	<0.003	
RW-6	06/11/13	L641163-12	<0.001	<0.005	<0.001	<0.003	
RW-6	09/10/13	L656835-10	<0.001	<0.005	<0.001	<0.003	
RW-6	11/07/13	L667856-10	<0.001	<0.005	<0.001	<0.003	
RW-6	03/05/14	L686955-10	<0.001	<0.005	<0.001	<0.003	
RW-6	06/03/14	L703477-13	<0.001	<0.005	<0.001	<0.003	
RW-6	09/17/14	L722791-10	<0.001	<0.005	<0.001	<0.003	
RW-6	11/12/14	L733897-10	<0.001	<0.005	<0.001	<0.003	
RW-6	02/25/14	L750722-11	<0.001	<0.005	<0.001	<0.003	
RW-6	06/16/15	L772255-13	<0.001	<0.005	<0.001	<0.003	
RW-6	08/26/15	L785959-10	<0.001	<0.005	<0.001	<0.003	
RW-6	11/17/15	L802523-10	<0.001	<0.005	<0.001	<0.003	
RW-6	03/08/16	L822589-10	<0.001	<0.005	<0.001	<0.003	
RW-6	05/17/16	L836879-13	<0.001	<0.005	<0.001	<0.003	

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Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
RW-6	09/19/16	L860929-10	<0.001	<0.005	<0.001	<0.003	
RW-6	12/14/16	L879214-03	<0.001	<0.001	<0.001	<0.003	
RW-6	02/28/17	L893439-10	<0.001	<0.001	<0.001	<0.003	
RW-6	05/08/17	L908717-13	<0.001	<0.001	<0.001	<0.003	
RW-6	09/15/17	L936890-03	<0.001	<0.001	<0.001	<0.003	
RW-6	11/29/17	L954383-10	<0.001	<0.001	<0.001	<0.003	
RW-6	03/07/18	L976397-10	<0.001	<0.001	<0.001	<0.003	
RW-6	06/13/18	L1001691-13	<0.001	<0.001	<0.001	<0.003	
RW-6	09/05/18	L1023536-10	<0.001	<0.001	<0.001	<0.003	
RW-6	11/28/18	L1048614-10	<0.001	<0.001	<0.001	<0.003	
RW-6	02/12/19	L1069996-10	<0.001	<0.001	<0.001	<0.003	
RW-6	05/08/19	L1097774-12	<0.001	<0.001	<0.001	<0.003	
RW-6	08/22/19	L1132369-10	<0.001	<0.001	<0.001	<0.003	
RW-6	11/06/19	L1158995-11	<0.001	<0.001	<0.001	<0.003	
RW-7	11/07/13	L667856-11	<0.001	<0.005	<0.001	<0.003	
RW-7	03/05/14	L686955-11	<0.001	<0.005	<0.001	<0.003	
RW-7	06/03/14	L703477-14	0.00036 J	<0.005	<0.001	<0.003	
RW-7	09/17/14	L722791-11	<0.001	<0.005	<0.001	<0.003	
RW-7	11/12/14	L733897-11	<0.001	<0.005	<0.001	<0.003	
RW-7	02/25/15	L750722-10	<0.001	<0.005	<0.001	<0.003	
RW-7	06/16/15	L772255-14	<0.001	<0.005	<0.001	<0.003	
RW-7	08/26/15	L785959-11	<0.001	<0.005	<0.001	<0.003	
RW-7	11/17/15	L802523-11	<0.001	<0.005	0.000568 J	<0.003	
RW-7	03/08/16	L822589-11	<0.001	<0.005	0.000563 J	<0.003	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
RW-7	05/17/16	L836879-14	<0.001	<0.005	0.00052 J	<0.003	
RW-7	09/19/16	L860929-11	<0.001	<0.005	0.000447 J	<0.003	
RW-7	12/14/16	L879214-04	<0.001	<0.001	<0.001	<0.003	
RW-7	02/28/17	L893439-11	<0.001	<0.001	<0.001	<0.003	
RW-7	05/08/17	L908717-14	<0.001	<0.001	<0.001	<0.003	
RW-7	09/15/17	L936890-04	<0.001	<0.001	<0.001	<0.003	
RW-7	11/29/17	L954383-11	<0.001	<0.001	<0.001	<0.003	
RW-7	03/07/18	L976397-11	<0.001	<0.001	<0.001	<0.003	
RW-7	06/13/18	L1001691-14	<0.001	<0.001	<0.001	<0.003	
RW-7	09/05/18	L1023536-11	<0.001	<0.001	0.00381	<0.003	
RW-7	11/28/18	L1048614-11	<0.001	<0.001	<0.001	<0.003	
RW-7	02/12/19	L1069996-11	0.00105	<0.001	0.00771	<0.003	
RW-7	05/08/19	L1097774-13	<0.001	<0.001	0.00363	<0.003	
RW-7	08/22/19	L1132369-11	<0.001	<0.001	0.00122	<0.003	
RW-7	11/06/19	L1158995-12	<0.001	<0.001	<0.001	<0.003	
RW-8	06/03/14	L703477-15	**0.61**	0.31 J	0.63	**1.3**	
RW-8	06/16/15	L772255-15	**2.6**	**1.1**	**1.1**	**2.5**	
RW-8	05/17/16	L836879-15	**0.41**	0.034 J6	0.343	0.617	
RW-8	05/08/17	L908717-15	**0.243**	0.0325	0.326	0.482	
RW-8	06/13/18	L1001691-15	**0.245**	0.027	0.529	**0.657**	
RW-8	02/12/19	NS	NS	NS	NS	NS	
RW-8	05/08/19	L1097774-14	**0.0624**	0.00759	0.126	0.247	
RW-8	08/22/19	NS	NS	NS	NS	NS	

TABLE 4
Historical Groundwater Analytical Results
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Well Number	Sample Date	Sample ID	SW 846-8021B				Total Dissolved Solids (mg/L)
			Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	
			NMOCD Remediation Criteria				
			0.01 mg/L	0.75 mg/L	0.75 mg/L	0.62 mg/L	
RW-8	11/06/19	NS	NS	NS	NS	NS	

NMOCD: New Mexico Oil Conservation Division
Exceedences of NMOCD Remediation Criteria are shown in ***bold***
[a] *Result is from Run #2*
J: Analyte detected below method detection limit (MDL) but above sample detection limit (SDL)

TABLE 5
Groundwater Analytical Results for Polynuclear Aromatic Hydrocarbons
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Monitoring Well	Sample Date	Lab Report #	Naphthalene	Acenaphthylene	Acenaphthene	Flourene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]-anthracene	Chrysene	Benzo[b]-fluoranthene	Benzo[a]-pyrene	Dibenzofuran	Dibenz[a,h]-anthracene	Benzo[g,h,i]-perylene	Benzo(k)fluoranthene	1-Methylnaphthalene	2-Methylnaphthalene	Total methylnaphthalene	TPH-GRO (C6-C10)	TPH (C10-C28)	TPH (C28-C30)
Units			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Other regulatory limits (Tap Water*)			***		365	243	0.91	1100	1830	1460	183	0.91	29.1	0.91	0.7**		0.091		9.1			***			
MW-1	12/7/2011	1112252-01	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NA	<0.20	<0.20	NA	NA	NA	NA	NA
MW-1	5/22/2012	12051078-01	<0.0965	<0.0965	<0.0965	<0.0965	<0.0965	<0.0965	<0.0965	<0.0965	<0.0965	<0.0965	<0.0965	<0.0965	<0.0965		<0.0965	<0.0965	<0.0965	NA	NA	NA	NA	NA	NA
MW-1	5/17/2016	L836879-01	0.0394 BJ	<0.0500	<0.0500	<0.0500	<0.0500	0.00931 J	<0.0500	<0.0500	<0.0500	0.00786 BJ	<0.0500	<0.0500	<0.0500	0.0193 BJ	<0.0500	<0.0500	<0.0500	0.0126 J	0.0129 J	NA	NA	NA	NA
MW-1	5/8/2017	L908717-01	0.0713 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.0442 J	<0.0500	<0.0500	<0.0500	0.0265 J	0.0215 J	NA	NA	NA	NA
MW-2	5/17/2016	L836879-02	0.0421 BJ	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00618 BJ	<0.0500	<0.0500	<0.0500	0.00393 BJ	<0.0500	<0.0500	<0.0500	0.00825 J	0.0098 J	NA	NA	NA	NA
MW-2	5/8/2017	L908717-02	0.0299 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.0019 J	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
MW-3	5/17/2016	L836879-03	0.0222 BJ	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00624 BJ	<0.0500	<0.0500	<0.0500	0.00424 BJ	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
MW-3	5/8/2017	L908717-03	0.0340 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00146 J	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
MW-4	5/17/2016	L836879-04	0.0316 BJ	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00598 BJ	<0.0500	<0.0500	<0.0500	0.00287 BJ	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
MW-4	5/8/2017	L908717-04	0.0337 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00208 J	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
MW-5	5/17/2016	L836879-05	0.0234 BJ	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00603 BJ	<0.0500	<0.0500	<0.0500	0.00225 BJ	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
MW-5	5/9/2017	L908717-05	0.0241 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00148 J	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
MW-6	5/17/2016	L836879-06	0.467 BJ	<0.0500	0.016 J	<0.0500	<0.0500	0.0101 J	<0.0500	<0.0500	<0.0500	0.00622 BJ	<0.0500	<0.0500	<0.0500	0.00636 BJ	<0.0500	<0.0500	<0.0500	<0.50	<0.50	NA	NA	NA	NA
MW-6	5/9/2017	L908717-06	0.035 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00223 J	<0.0500	0.0350 J	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
MW-7	5/17/2016	L836879-07	0.0298 BJ	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00695 BJ	<0.0500	<0.0500	<0.0500	0.00359 BJ	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
MW-7	5/8/2017	L908717-07	0.0405 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00204 J	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
RW-1	5/28/2008	T22367-8	14.1	<1.6	<1.5	<2.1	<2.4	<1.6	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.3		<2.5	<1.6		13		9.01	3.28	
RW-1	5/19/2009	196557	17.6	<0.0707	<0.131	1.98	<0.0801	2.76	<0.808	<0.808	<0.0458	<0.0302	<0.0913	<0.0631	<0.0506	<0.0558	2.34	<0.0628	<0.0765	19.9	17.2	37.1	3.73	<0.876	
RW-1	5/12/2010	1005475-08	2	<0.20	<0.20	0.31	<0.20	0.39	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.39	<0.20	<0.20	2.8	2.3	5.1	6.5	4.6	<0.47
RW-1	5/22/2012	12051078-08	17.1	0.196	0.167	<0.0982	<0.0982	1.59	<0.0982	1.17	<0.0982	<0.0982	0.208	<0.0982	<0.0982		<0.0982	<0.0982	<0.0982	NA	NA	NA	NA	NA	NA
RW-1	6/11/2013	L641163-08	8.7	0.069	0.14	0.51	<0.015	0.42 J	0.046 J	<0.016	0.021	<0.012	<0.040	<0.014	<0.012	0.081	<0.040	<0.011	<0.014	8.3	6.9	NA	NA	NA	NA
RW-1	6/3/2014	L703477-08	0.018	0.00022	0.006	0.0018	<0.0500	0.0022	<0.00005	0.000049J	0.00022	0.000034	0.00011	<0.0500	<0.0500	0.0022	<0.0500	0.016 J	<0.0500	0.021	0.019	0.04	NA	NA	NA
RW-1	6/16/2015	L772255-08	0.0025	0.000034 J	0.000079 J	0.0003	<0.0500	0.00025 J	0.000034 J	<0.0500	0.018 J	0.000016 J	<0.0500	0.0034 J	<0.0500	0.00029	<0.0500	0.0033 J	<0.0500	0.0026	0.0017	0.0043	NA	NA	NA
RW-1	5/17/2016	L836879-08	2.87	0.0165 J	0.042 J	0.138	<0.0500	0.123	0.0235 J	<0.0500	0.0144 J	0.00824 BJ	<0.0500	<0.0500	<0.0500	0.187	<0.0500	<0.0500	<0.0500	1.97	0.379	2.349	NA	NA	NA
RW-1	5/9/2017	L908717-08	4.99	0.0397 J	0.0415 J	0.391	<0.0500	0.364	0.0546 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.436	<0.0500	0.00415 J	<0.0500	4.43	3.21	7.64	NA	NA	NA
RW-1	6/12/2018	L1001691-08	19.5	<0.0500	0.658	2.22	<0.0500	1.93	<0.0500	<0.0500	0.205	<0.0500	0.081	<0.0500	<0.0500	2.84	<0.0500	<0.0500	<0.0500	23.4	16.9	40.3			
RW-1	5/8/2019	L1097774-08	9.97	<0.100	0.289	0.805	<0.100	1.00	<0.100	<0.100	0.158	0.102	<0.100	<0.100	<0.100	1.20	<0.100	<0.100	<0.100	8.13	5.82	13.95			
RW-2	5/28/2008	T-22367-9	10	<1.6	<1.5	<2.1	<2.4	<1.6	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.3		<2.5	<1.6		7.4		3.61	1.53	
RW-2	5/19/2009	196558	2.66	<0.0707	<0.131	1.17	<0.0801	1.49	<0.808	<0.808	<0.0458	<0.0302	<0.0913	<0.0631	<0.0506	<0.0558	1.05	<0.0628	<0.0765	5.64	4.16	9.8	1.77	<0.876	
RW-2	5/12/2010	1005475-09	30	<0.20	<0.20	2.5	<0.20	4.4	<0.20	<0.20	0.24	<0.20	0.68	<0.20	<0.20	<0.20	4.2	<0.20	<0.20	43	44	87	110	170	20
RW-2	5/22/2012	12051078-09	82.5	2.47	1.12	12.6	<0.0971	24.8	0.579	0.907	0.756	0.852	3.71	<0.0971	<0.0971	NA	<0.0971	<0.0971	<0.0971	NA	NA	NA	NA	NA	NA
RW-2	6/11/2013	L641163-09	6.7	0.07	0.12	0.39	<0.015	0.28	0.086	0.39	0.047	<0.012	<0.011	0.014	<0.012	0.66	<0.004	<0.011	<0.014	5.8	4.9	NA	NA	NA	NA
RW-2	6/3/2014	L703477-09	0.006	0.000056	0.00013	0.00044	<0.0500	0.00051	<0.0500	<0.0500	0.000026J	<0.0500	<0.0500	<0.0500	<0.0500	0.00068	<0.0500	<0.0500	<0.0500	0.0064	0.0059	0.0123	NA	NA	NA
RW-2	6/16/2015	L772255-09	0.00012 J J	<0.00005	0.000011 J	0.000018 J	<0.0500	0.000017 J	<0.0500	<0.0500	<0.0500	0.012 J J	<0.0500	0.0041 J	<0.0500	0.032 J	<0.0500	0.0046 J	<0.0500	0.00013 J	.000011 J	0.00141J	NA	NA	NA
RW-2	5/17/2016	L836879-09	2.37	0.0166 J	0.0362 J	0.119	<0.0500	0.129	0.0239 J	<0.0500	<0.0500	0.012 BJ	<0.0500	<0.0500	<0.0500	0.187	<0.0500	<0.0500	<0.0500	2.07	1.76	3.83	NA	NA	NA
RW-2	5/9/2017	L908717-09	39.9	0.201	0.203	1.88	<0.0500	1.58	0.193	<0.0500	0.0471 J	<0.0500	<0.0500	<0.0500	0.0275	**2.68**	<0.0500	0.00974 J	<0.0500	32.8	28.1	60.9	NA	NA	NA
RW-2	6/13/2018	L1001691-09	<0.250	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.250	<0.250			
RW-3	5/28/2008	T22367-10	13.5	<1.6	<1.5	<2.1	<2.4	<1.6	<1.8	<1.6	<1.1	<1.4	<1.3	<1.5	<1.6	<1.3		<2.5	<1.6		7.8		3.81	0.292	
RW-3	5/19/2009	196559	25	<0.0707	<0.131	2.29	<0.0801	3.26	<0.808	<0.808	<0.0458	<0.0302	<0.0913	<0.0633	<0.0506	<0.0558	3.24	<0.0628	<0.0765	27.2	22.6	49.8	3.1 J	1.18 J	
RW-3	5/12/2010	1005475-10	33	<0.20	0.47	3.7	<0.20	6.3	0.54	<0.20	<0.20	<0.20	1	<0.20	<0.20	<0.20	4.6	<0.20	<0.20	53	53	106	120	170	26
RW-3	5/22/2012	12051078-10	42.6	1.26	0.874	7.16	<0.0988	20.7	1.13	0.706	0.646	<0.0988	2.01	0.153	<0.0988	NA	<0.0988	<0.0988	0.188	NA	NA	NA	NA	NA	NA
RW-3	6/11/2013	L641163-10	10	0.46	0.82	2.3	<0.015	2	0.31	0.37	0.57	0.29	0.32	<0.014	<0.012	2.9	0.12	<0.011	<0.014	13	12	NA	NA	NA	NA
RW-3	6/3/2014	L703477-10	0.015	0.00027	0.00065	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00012	<0.0500	<0.0500	0.0029	<0.0500	0.013	<0.0500	0.02	0.019	0.039	NA	NA	NA
RW-3	6/16/2015	L772255-10	0.021	0.00019	0.00047	0.0015	<0.0500	0.0014	0.00031	0.027 J	0.00016	0.00012	0.082	0.019 J	<0.0500	0.0021	<0.0500	0.013 J	0.026 J	0.019	0.014	0.033	NA	NA	NA
RW-3	5/17/2016	L836879-10	3.92	0.0443 J	0.0826	0.258	<0.0500	0.264	0.0833	<0.0500	0.0549	<0.0500	0.0153 J	<0.0500	<0.0500	0.572	<0.0500	<0.0500	<0.0500	2.88	2.42	5.3	NA	NA	NA
RW-3	5/9/2017	L908717-10	9.12	0.0869	0.241	0.817	<0.0500	0.822	0.176	<0.0500	0.0890	<0.0500	<0.0500	<0.0500	<0.0500	1.19	<0.0500	0.00611 j	<0.0500	9.22	6.63	15.85	NA	NA	NA
RW-3	6/12/2018	L1001691-10	57.9	<0.0500	<0.0500	4.7	<0.0500	6.33	<0.0500	<0.0500	0.7510	<0.0500	0.385	<0.0500	<0.0500	6.78	<0.0500	<0.0500	<0.0500	69	54.5	123.5			
RW-3	5/8/2019	L1097774-11	15.7	<0.0500	0.261	0.935	<0.0500	0.717	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	1.59	<0.0500	<0.0500	<0.0500	12.8	9.89	22.69			
RW-4	5/17/2016	L836879-11	0.0234 BJ	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00645 BJ	<0.0500	<0.0500	<0.0500	0.00264 BJ	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
RW-4	5/9/2017	L908717-11	0.0405 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00158 J	<0.0500	<0.0500	<0.0500	<0.250	0.00938 J	0.00938			

TABLE 5
Groundwater Analytical Results for Polynuclear Aromatic Hydrocarbons
Vacuum to Jal 14" Mainline #5
Lea County, New Mexico
NMOC No. 1R-0464

Monitoring Well	Sample Date	Lab Report #	Naphthalene	Acenaphthylene	Acenaphthene	Flourene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo[a]-anthracene	Chrysene	Benzo[b]-fluoranthene	Benzo[a]-pyrene	Dibenzofuran	Dibenz[a,h]-anthracene	Benzo[g,h,i]-perylene	Benzo(k)fluoranthene	1-Methylnaphthalene	2-Methylnaphthalene	Total methylnaphthalene	TPH-GRO (C6-C10)	TPH (C10-C28)	TPH (C28-C30)
Units			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Other regulatory limits (Tap Water*)			***		365	243	0.91	1100	1830	1460	183	0.91	29.1	0.91	0.7**		0.091		9.1			***			
RW-5	5/17/2016	L836879-12	0.0329 BJ	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.006 BJ	<0.0500	<0.0500	<0.0500	0.00224 BJ	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
RW-5	5/9/2017	L908717-12	0.0301 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00129 J	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
RW-6	5/17/2016	L836879-13	<0.250	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00585 BJ	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
RW-6	5/9/2017	L908717-13	0.0247 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00107 J	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
RW-7	6/3/2014	L703477-14	0.035 J	<0.0500	<0.0500	<0.0500	<0.0500	0.000035	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.0000022J	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
RW-7	5/17/2016	L836879-14	0.0258 BJ	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00664 BJ	<0.0500	<0.0500	<0.0500	0.00211 BJ	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
RW-7	5/9/2017	L908717-14	0.0222 j	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.00155 J	<0.0500	<0.0500	<0.0500	<0.250	<0.250	NA	NA	NA	NA
RW-7	6/13/2018	L1001691-14	<0.250	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.250	<0.250			
RW-8	6/3/2014	L703477-15	0.062	0.00061	0.0016	0.005	<0.0500	0.0078	<0.0500	0.00017	0.00067	0.00085	0.00041	<0.0500	<0.0500	0.0069	<0.0500	0.000056	<0.0500	0.049	0.049	0.098	NA	NA	NA
RW-8	6/16/2015	L772255-15	0.095	0.001	0.0035	0.0095	<0.0500	0.012	0.0022	0.00038 J	0.0014	0.00097	0.00053	0.00016 J	0.00013 J	0.012	0.000048 J	0.00015 J	0.00018 J	0.1	0.1	0.2	NA	NA	NA
RW-8	5/17/2016	L836879-15	0.0261	0.148	0.292	1.21	<0.0500	1.06	0.0414 J	<0.0500	0.0185 J	0.0115 BJ	<0.0500	<0.0500	<0.0500	2.13	<0.0500	<0.0500	<0.0500	22.4	18.9	**41.3**	NA	NA	NA
RW-8	5/9/2017	L908717-15	**44.9**	0.257	0.251	2.46	<0.0500	1.82	<0.0500	0.0422 J	0.0641	<0.0500	<0.0500	<0.0500	0.0311 J	3.56	<0.0500	0.00875 J	<0.0500	44	33.4	**77.4**	NA	NA	NA
RW-8	6/13/2018	L1001691-15	**41.8**	<0.0500	0.706	2.62	<0.0500	2.02	<0.0500	<0.0500	0.141	<0.0500	0.0532	<0.0500	<0.0500	4.3	<0.0500	<0.0500	<0.0500	57.7	34	**91.7**			
RW-8	5/8/2019	L1097774-14	17.7	<0.0500	0.401	1.86	<0.0500	1.19	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	2.94	<0.0500	<0.0500	<0.0500	26.4	11.2	**37.6**			

NMOCD: New Mexico Oil Conservation Division
*Exceedences of NMOCD Remediation Criteria are shown in **bold***
J: Analyte detected below method detection limit (MDL but above sample detection limit (SDL)
** Values reported from run 2 as carry over was reported in run 1*
Tap Water: New Mexico Environmental Department (NMED) Tap Water Soil screening levels for residential scenarios.*
**** = NM Water Quality Standard for PAHs is 30µg/L for total naphthalenes plus monomethylnaphthalenes (total methylnaphthalenes)*
*** = NM Water Quality Standard*
[a] Estimated concentration value greater than standard range
NA: Not analyzed

TABLE 6

2019 PSH aand Dissolved Phase Groundwater Recovery Data

Vacuum to Jal 14" Mainline #5

Lea County, New Mexico

NMOC No. 1R-0464

Well	PSH Recovered (gallons)	Groundwater Recovered (gallons)	Total Fluids Recovered (gallons)
RW1	0.00	40.00	40
RW2	1.00	39.00	40
RW3	1.00	39.00	40
RW-8	8.00	92.00	100
Totals for 2019	**10.00**	**210.00**	220

Note: The above estimated gallons of total fluids (PSH and groundwater) include those pumped and manually bailed; these are estimates only.

Appendix A

2019 Laboratory Reports and Chain of Custody Documentation

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 21, 2019

Plains All American Pipeline - Entech

Sample Delivery Group:	L1069996
Samples Received:	02/14/2019
Project Number:	PAA 12015
Description:	Vac to Jal #5
Site:	SRS - 2003-00134
Report To:	Kathleen Buxton 21 Waterway Ave., Suite 300 The Woodlands, TX 77380

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

MW1 L1069996-01 GW

Collected by: Shane Diller | Collected date/time: 02/12/19 14:40 | Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237353	1	02/15/19 01:12	02/15/19 01:12	ACG

MW2 L1069996-02 GW

Collected by: Shane Diller | Collected date/time: 02/12/19 14:30 | Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237353	1	02/15/19 01:31	02/15/19 01:31	ACG

MW3 L1069996-03 GW

Collected by: Shane Diller | Collected date/time: 02/12/19 13:30 | Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237353	1	02/15/19 01:51	02/15/19 01:51	ACG

MW4 L1069996-04 GW

Collected by: Shane Diller | Collected date/time: 02/12/19 13:40 | Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237353	1	02/15/19 02:10	02/15/19 02:10	ACG

MW5 L1069996-05 GW

Collected by: Shane Diller | Collected date/time: 02/12/19 15:10 | Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237356	1	02/14/19 18:50	02/14/19 18:50	JCP

MW6 L1069996-06 GW

Collected by: Shane Diller | Collected date/time: 02/12/19 14:20 | Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237356	1	02/14/19 19:10	02/14/19 19:10	JCP

MW7 L1069996-07 GW

Collected by: Shane Diller | Collected date/time: 02/12/19 15:00 | Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237356	1	02/14/19 19:30	02/14/19 19:30	JCP

RW4 L1069996-08 GW

Collected by: Shane Diller | Collected date/time: 02/12/19 13:50 | Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237356	1	02/14/19 19:50	02/14/19 19:50	JCP

RW5 L1069996-09 GW

Collected by: Shane Diller
Collected date/time: 02/12/19 14:00
Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237356	1	02/14/19 20:09	02/14/19 20:09	JCP

RW6 L1069996-10 GW

Collected by: Shane Diller
Collected date/time: 02/12/19 14:50
Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237356	1	02/14/19 20:29	02/14/19 20:29	JCP

RW7 L1069996-11 GW

Collected by: Shane Diller
Collected date/time: 02/12/19 14:10
Received date/time: 02/14/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1237356	1	02/14/19 20:49	02/14/19 20:49	JCP

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	02/15/2019 01:12	WG1237353
Toluene	ND		0.00100	1	02/15/2019 01:12	WG1237353
Ethylbenzene	ND		0.00100	1	02/15/2019 01:12	WG1237353
Total Xylenes	ND		0.00300	1	02/15/2019 01:12	WG1237353
(S) Toluene-d8	*98.7*		*80.0-120*		*02/15/2019 01:12*	WG1237353
(S) a,a,a-Trifluorotoluene	*100*		*80.0-120*		*02/15/2019 01:12*	WG1237353
(S) 4-Bromofluorobenzene	*97.1*		*77.0-126*		*02/15/2019 01:12*	WG1237353
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*02/15/2019 01:12*	WG1237353

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	02/15/2019 01:31	WG1237353
Toluene	ND		0.00100	1	02/15/2019 01:31	WG1237353
Ethylbenzene	ND		0.00100	1	02/15/2019 01:31	WG1237353
Total Xylenes	ND		0.00300	1	02/15/2019 01:31	WG1237353
(S) Toluene-d8	*99.1*		*80.0-120*		*02/15/2019 01:31*	WG1237353
(S) a,a,a-Trifluorotoluene	*101*		*80.0-120*		*02/15/2019 01:31*	WG1237353
(S) 4-Bromofluorobenzene	*97.4*		*77.0-126*		*02/15/2019 01:31*	WG1237353
(S) 1,2-Dichloroethane-d4	*98.3*		*70.0-130*		*02/15/2019 01:31*	WG1237353

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	02/15/2019 01:51	WG1237353
Toluene	ND		0.00100	1	02/15/2019 01:51	WG1237353
Ethylbenzene	ND		0.00100	1	02/15/2019 01:51	WG1237353
Total Xylenes	ND		0.00300	1	02/15/2019 01:51	WG1237353
(S) Toluene-d8	*100*		*80.0-120*		*02/15/2019 01:51*	WG1237353
(S) a,a,a-Trifluorotoluene	*101*		*80.0-120*		*02/15/2019 01:51*	WG1237353
(S) 4-Bromofluorobenzene	*97.6*		*77.0-126*		*02/15/2019 01:51*	WG1237353
(S) 1,2-Dichloroethane-d4	*101*		*70.0-130*		*02/15/2019 01:51*	WG1237353

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	02/15/2019 02:10	WG1237353
Toluene	ND		0.00100	1	02/15/2019 02:10	WG1237353
Ethylbenzene	ND		0.00100	1	02/15/2019 02:10	WG1237353
Total Xylenes	ND		0.00300	1	02/15/2019 02:10	WG1237353
(S) Toluene-d8	*99.5*		*80.0-120*		*02/15/2019 02:10*	WG1237353
(S) a,a,a-Trifluorotoluene	*101*		*80.0-120*		*02/15/2019 02:10*	WG1237353
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*02/15/2019 02:10*	WG1237353
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*02/15/2019 02:10*	WG1237353

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	02/14/2019 18:50	WG1237356
Toluene	ND		0.00100	1	02/14/2019 18:50	WG1237356
Ethylbenzene	ND		0.00100	1	02/14/2019 18:50	WG1237356
Total Xylenes	ND		0.00300	1	02/14/2019 18:50	WG1237356
(S) Toluene-d8	*99.4*		*80.0-120*		*02/14/2019 18:50*	WG1237356
(S) a,a,a-Trifluorotoluene	*102*		*80.0-120*		*02/14/2019 18:50*	WG1237356
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*02/14/2019 18:50*	WG1237356
(S) 1,2-Dichloroethane-d4	*94.5*		*70.0-130*		*02/14/2019 18:50*	WG1237356

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	02/14/2019 19:10	WG1237356
Toluene	ND		0.00100	1	02/14/2019 19:10	WG1237356
Ethylbenzene	ND		0.00100	1	02/14/2019 19:10	WG1237356
Total Xylenes	ND		0.00300	1	02/14/2019 19:10	WG1237356
(S) Toluene-d8	*99.7*		*80.0-120*		*02/14/2019 19:10*	WG1237356
(S) a,a,a-Trifluorotoluene	*101*		*80.0-120*		*02/14/2019 19:10*	WG1237356
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*02/14/2019 19:10*	WG1237356
(S) 1,2-Dichloroethane-d4	*95.8*		*70.0-130*		*02/14/2019 19:10*	WG1237356

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	02/14/2019 19:30	WG1237356
Toluene	ND		0.00100	1	02/14/2019 19:30	WG1237356
Ethylbenzene	ND		0.00100	1	02/14/2019 19:30	WG1237356
Total Xylenes	ND		0.00300	1	02/14/2019 19:30	WG1237356
(S) Toluene-d8	*99.6*		*80.0-120*		*02/14/2019 19:30*	WG1237356
(S) a,a,a-Trifluorotoluene	*97.5*		*80.0-120*		*02/14/2019 19:30*	WG1237356
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*02/14/2019 19:30*	WG1237356
(S) 1,2-Dichloroethane-d4	*94.2*		*70.0-130*		*02/14/2019 19:30*	WG1237356

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	02/14/2019 19:50	WG1237356
Toluene	ND		0.00100	1	02/14/2019 19:50	WG1237356
Ethylbenzene	ND		0.00100	1	02/14/2019 19:50	WG1237356
Total Xylenes	ND		0.00300	1	02/14/2019 19:50	WG1237356
(S) Toluene-d8	*101*		*80.0-120*		*02/14/2019 19:50*	WG1237356
(S) a,a,a-Trifluorotoluene	*99.3*		*80.0-120*		*02/14/2019 19:50*	WG1237356
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*02/14/2019 19:50*	WG1237356
(S) 1,2-Dichloroethane-d4	*92.6*		*70.0-130*		*02/14/2019 19:50*	WG1237356

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	02/14/2019 20:09	WG1237356
Toluene	ND		0.00100	1	02/14/2019 20:09	WG1237356
Ethylbenzene	ND		0.00100	1	02/14/2019 20:09	WG1237356
Total Xylenes	ND		0.00300	1	02/14/2019 20:09	WG1237356
(S) Toluene-d8	*103*		*80.0-120*		*02/14/2019 20:09*	WG1237356
(S) a,a,a-Trifluorotoluene	*102*		*80.0-120*		*02/14/2019 20:09*	WG1237356
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*02/14/2019 20:09*	WG1237356
(S) 1,2-Dichloroethane-d4	*96.3*		*70.0-130*		*02/14/2019 20:09*	WG1237356

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	02/14/2019 20:29	WG1237356
Toluene	ND		0.00100	1	02/14/2019 20:29	WG1237356
Ethylbenzene	ND		0.00100	1	02/14/2019 20:29	WG1237356
Total Xylenes	ND		0.00300	1	02/14/2019 20:29	WG1237356
(S) Toluene-d8	*103*		*80.0-120*		*02/14/2019 20:29*	WG1237356
(S) a,a,a-Trifluorotoluene	*99.8*		*80.0-120*		*02/14/2019 20:29*	WG1237356
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*02/14/2019 20:29*	WG1237356
(S) 1,2-Dichloroethane-d4	*95.0*		*70.0-130*		*02/14/2019 20:29*	WG1237356

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	0.00105		0.00100	1	02/14/2019 20:49	WG1237356
Toluene	ND		0.00100	1	02/14/2019 20:49	WG1237356
Ethylbenzene	0.00771		0.00100	1	02/14/2019 20:49	WG1237356
Total Xylenes	ND		0.00300	1	02/14/2019 20:49	WG1237356
(S) Toluene-d8	*100*		*80.0-120*		*02/14/2019 20:49*	WG1237356
(S) a,a,a-Trifluorotoluene	*103*		*80.0-120*		*02/14/2019 20:49*	WG1237356
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*02/14/2019 20:49*	WG1237356
(S) 1,2-Dichloroethane-d4	*96.2*		*70.0-130*		*02/14/2019 20:49*	WG1237356

Method Blank (MB)

(MB) R3384565-2 02/14/19 21:20

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*99.2*			*80.0-120*
(S) a,a,a-Trifluorotoluene	*99.8*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.0*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*98.6*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3384565-1 02/14/19 20:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0250	0.0302	121	70.0-123	
Ethylbenzene	0.0250	0.0284	114	79.0-123	
Toluene	0.0250	0.0268	107	79.0-120	
Xylenes, Total	0.0750	0.0852	114	79.0-123	
(S) Toluene-d8			*91.9*	*80.0-120*	
(S) a,a,a-Trifluorotoluene			*100*	*80.0-120*	
(S) 4-Bromofluorobenzene			*97.1*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*110*	*70.0-130*	

Method Blank (MB)

(MB) R3385074-3 02/14/19 18:31

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*100*			*80.0-120*
(S) a,a,a-Trifluorotoluene	*99.5*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*90.2*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3385074-1 02/14/19 17:32 • (LCSD) R3385074-2 02/14/19 17:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0298	0.0292	119	117	70.0-123			2.16	20
Ethylbenzene	0.0250	0.0299	0.0303	120	121	79.0-123			1.40	20
Toluene	0.0250	0.0281	0.0279	112	111	79.0-120			0.822	20
Xylenes, Total	0.0750	0.0895	0.0890	119	119	79.0-123			0.560	20
(S) Toluene-d8				*99.7*	*101*	*80.0-120*				
(S) a,a,a-Trifluorotoluene				*98.3*	*98.7*	*80.0-120*				
(S) 4-Bromofluorobenzene				*105*	*105*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*102*	*104*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

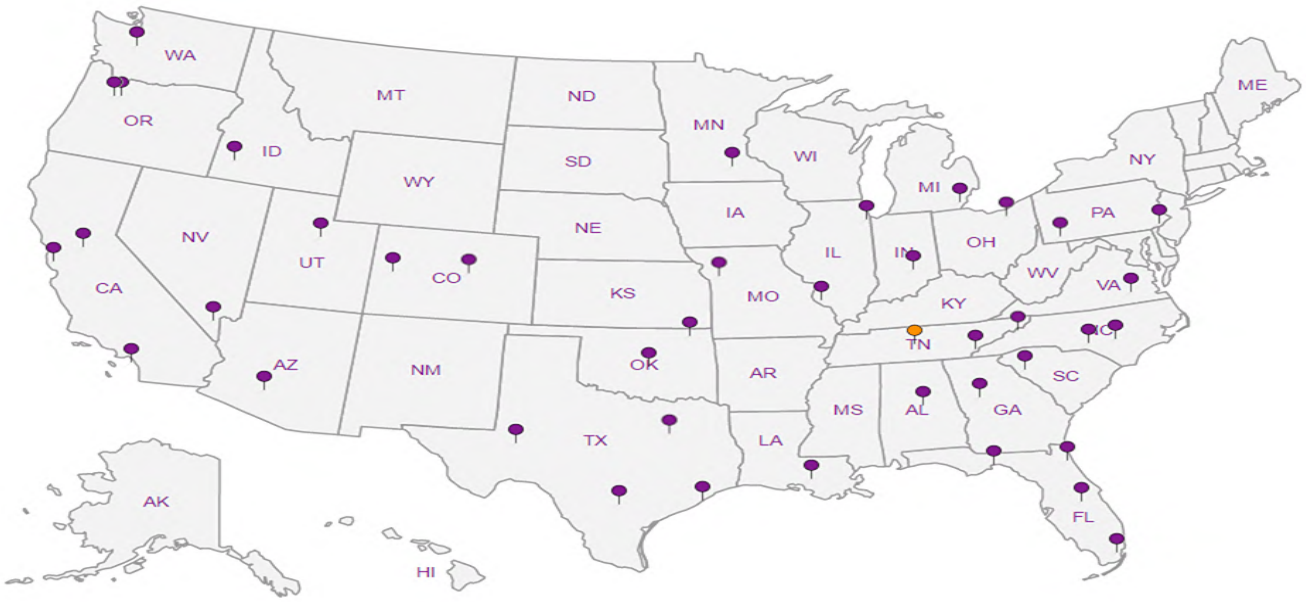
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Company Name/Address:
Plains All American Pipeline
EnTech
21 Waterway Ave. Suite 300
The woodlands, TX 77380

Billing Information:
Attn: Accounts Payable
333 Clay St., Ste 1600
Houston, TX 77002

Report to: **Kathleen Buxton**

Email To: **Kathleen.buxton@entechservice.com**

Project Description: Vac to Jal #5

City/State Collected: Eunice NM

Phone: **281-362-2714**
Fax:

Client Project # PAA 12015

Lab Project #

Collected by (print): SHANE DILLER

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ___Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

V8260 BTEX Ext. 40 mL Amber-HCL

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TD
MW1		GW		2-12-19	1440	2	
MW2					1430	2	
MW3					1330	2	
MW4					1340	2	
MW5					1510	2	
MW6					1420	2	
MW7					1500	2	
RW4					1350	2	
RW5					1400	2	
RW6		GW		2-12-19	1450	2	

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other ____

Remarks:

pH ____ Temp ____
Flow ____ Other ____

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	2-12-19	1700	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	2.13.19	14:50	Southwest Airlines
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Willis

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ ____
Temp: °C Bottles Received: 0.2 0.1 -0.1 2.5 22
Date: 2/14/19 Time: 900

Hold #
Condition: (lab use only)
PAD SCREEN <0.5 mR/hr
COC Seal Intact: ___Y ___N ___NA
pH Checked: NCF: X

Chain of Custody Page 2 of 2

ESC LABORATORIES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1069996

B001

Acctnum: PLAINSENT
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Item /Contaminant	Sample # (lab only)
	-01
	-02
	-03
	-04
	-05
	-06
	-07
	-08
	-09
	-10

Company Name/Address:
Plains All American Pipeline
EnTech
21 Waterway Ave. Suite 300
The woodlands, TX 77380

Billing Information:
Attn: Accounts Payable
333 Clay St., Ste 1600
Houston, TX 77002

Report to: **Kathleen Buxton**

Email To: **Kathleen.buxton@entechservice.com**

Project Description: Vac to Jal #5

City/State Collected: Eunice NM

Phone: **281-362-2714**
Fax:

Client Project #

Lab Project #

Collected by (print): SHANE ADKINS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No ___Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260 BTEX Ext. 40 mL Amber-HCL										Rem./Contaminant	Sample # (lab only)
RW7		GW		2-12-19	1410	2												-11

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

LN 406996

Table #

Acctnum: **PLAINSENT**

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	2-12-19	1700	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	2-13-19	14:50	Southwest Airlines
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Kwillis

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 2-0.1-0.1 °C Bottles Received: 22

Date: 2/14/19 Time: 900

Hold #

Condition: (lab use only)
RAD SCREEN: <0.5 mR/hr

COC Seal Intact: ___ Y ___ N ___ NA

pH Checked: NCF: X

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: PLAIN SENT		SDG#:	L1069996
Cooler Received/Opened On: 2/14/19		Temperature:	
Received By: Kristin Willis			
Signature: KWillis			

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?		✓	
Preservation Correct / Checked?			

Troy Dunlap

Pace Analytical®
National Center for Testing & Innovation

Login #: L1069996	Client: PLAINSENT	Date: 2/14/19	Evaluated by: Troy Dunlap

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Temperature not in range		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	pH not in range.		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courie
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container	X	Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments: No analysis marked on the COC. Logged for analysis listed.

Client informed by:		Call		Email		Voice Mail		Date: 2/14/19	Time: 1235
TSR Initials: MB	Client Contact:								

Login Instructions:

Log all samples for V8260BTEX

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

May 20, 2019

Plains All American Pipeline - Entech

Sample Delivery Group:	L1097774
Samples Received:	05/10/2019
Project Number:	PAA12015
Description:	Vac to Jal#5
Site:	SRS - 2003-00134
Report To:	Kathleen Buxton 21 Waterway Ave., Suite 300 The Woodlands, TX 77380

Entire Report Reviewed By:

Olivia Studebaker
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

MW1 L1097774-01 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 12:00 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	1	05/14/19 11:52	05/14/19 11:52	BMB	Mt. Juliet, TN

MW2 L1097774-02 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 12:50 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	1	05/14/19 12:13	05/14/19 12:13	BMB	Mt. Juliet, TN

MW3 L1097774-03 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 16:45 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1282619	1	05/17/19 09:58	05/17/19 09:58	ADM	Mt. Juliet, TN

MW4 L1097774-04 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 13:45 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	1	05/14/19 12:55	05/14/19 12:55	BMB	Mt. Juliet, TN

MW5 L1097774-05 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 17:05 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	1	05/14/19 13:16	05/14/19 13:16	BMB	Mt. Juliet, TN

MW6 L1097774-06 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 17:10 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	1	05/14/19 13:37	05/14/19 13:37	BMB	Mt. Juliet, TN

MW7 L1097774-07 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 14:25 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	1	05/14/19 13:58	05/14/19 13:58	BMB	Mt. Juliet, TN

RW1 L1097774-08 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 16:10 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	5	05/14/19 14:19	05/14/19 14:19	BMB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1280391	2	05/14/19 09:49	05/14/19 18:58	DMG	Mt. Juliet, TN

RW2 L1097774-09 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 17:00 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1282619	5	05/17/19 10:18	05/17/19 10:18	ADM	Mt. Juliet, TN

RW3 L1097774-10 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 15:05 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1282619	5	05/17/19 10:38	05/17/19 10:38	ADM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1280391	1	05/14/19 09:49	05/14/19 19:20	DMG	Mt. Juliet, TN

RW5 L1097774-11 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 16:50 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	1	05/14/19 15:22	05/14/19 15:22	BMB	Mt. Juliet, TN

RW6 L1097774-12 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 17:00 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	1	05/14/19 15:43	05/14/19 15:43	BMB	Mt. Juliet, TN

RW7 L1097774-13 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 16:55 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	1	05/14/19 16:03	05/14/19 16:03	BMB	Mt. Juliet, TN

RW8 L1097774-14 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 17:15 | Received date/time: 05/10/19 08:00

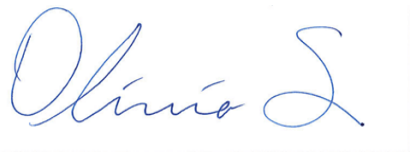
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	5	05/14/19 16:24	05/14/19 16:24	BMB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1280391	1	05/14/19 09:49	05/14/19 19:41	DMG	Mt. Juliet, TN

RW4 L1097774-15 GW

Collected by: Shane Dillel | Collected date/time: 05/08/19 16:40 | Received date/time: 05/10/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1280417	1	05/14/19 16:45	05/14/19 16:45	BMB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Olivia Studebaker
Project Manager

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/14/2019 11:52	WG1280417
Toluene	0.00486		0.00100	1	05/14/2019 11:52	WG1280417
Ethylbenzene	ND		0.00100	1	05/14/2019 11:52	WG1280417
Total Xylenes	ND		0.00300	1	05/14/2019 11:52	WG1280417
(S) Toluene-d8	*102*		*80.0-120*		*05/14/2019 11:52*	WG1280417
(S) a,a,a-Trifluorotoluene	*111*		*80.0-120*		*05/14/2019 11:52*	WG1280417
(S) 4-Bromofluorobenzene	*97.4*		*77.0-126*		*05/14/2019 11:52*	WG1280417
(S) 1,2-Dichloroethane-d4	*87.7*		*70.0-130*		*05/14/2019 11:52*	WG1280417

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/14/2019 12:13	WG1280417
Toluene	0.00488		0.00100	1	05/14/2019 12:13	WG1280417
Ethylbenzene	ND		0.00100	1	05/14/2019 12:13	WG1280417
Total Xylenes	ND		0.00300	1	05/14/2019 12:13	WG1280417
(S) Toluene-d8	*97.3*		*80.0-120*		*05/14/2019 12:13*	WG1280417
(S) a,a,a-Trifluorotoluene	*108*		*80.0-120*		*05/14/2019 12:13*	WG1280417
(S) 4-Bromofluorobenzene	*91.9*		*77.0-126*		*05/14/2019 12:13*	WG1280417
(S) 1,2-Dichloroethane-d4	*91.8*		*70.0-130*		*05/14/2019 12:13*	WG1280417

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/17/2019 09:58	WG1282619
Toluene	ND		0.00100	1	05/17/2019 09:58	WG1282619
Ethylbenzene	ND		0.00100	1	05/17/2019 09:58	WG1282619
Total Xylenes	ND		0.00300	1	05/17/2019 09:58	WG1282619
(S) Toluene-d8	*97.2*		*80.0-120*		*05/17/2019 09:58*	WG1282619
(S) a,a,a-Trifluorotoluene	*0.000*	J2	*80.0-120*		*05/17/2019 09:58*	WG1282619
(S) 4-Bromofluorobenzene	*89.5*		*77.0-126*		*05/17/2019 09:58*	WG1282619
(S) 1,2-Dichloroethane-d4	*128*		*70.0-130*		*05/17/2019 09:58*	WG1282619

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/14/2019 12:55	WG1280417
Toluene	0.00479		0.00100	1	05/14/2019 12:55	WG1280417
Ethylbenzene	ND		0.00100	1	05/14/2019 12:55	WG1280417
Total Xylenes	ND		0.00300	1	05/14/2019 12:55	WG1280417
(S) Toluene-d8	*96.6*		*80.0-120*		*05/14/2019 12:55*	WG1280417
(S) a,a,a-Trifluorotoluene	*105*		*80.0-120*		*05/14/2019 12:55*	WG1280417
(S) 4-Bromofluorobenzene	*92.9*		*77.0-126*		*05/14/2019 12:55*	WG1280417
(S) 1,2-Dichloroethane-d4	*89.3*		*70.0-130*		*05/14/2019 12:55*	WG1280417

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/14/2019 13:16	WG1280417
Toluene	ND		0.00100	1	05/14/2019 13:16	WG1280417
Ethylbenzene	ND		0.00100	1	05/14/2019 13:16	WG1280417
Total Xylenes	ND		0.00300	1	05/14/2019 13:16	WG1280417
(S) Toluene-d8	*99.5*		*80.0-120*		*05/14/2019 13:16*	WG1280417
(S) a,a,a-Trifluorotoluene	*107*		*80.0-120*		*05/14/2019 13:16*	WG1280417
(S) 4-Bromofluorobenzene	*94.8*		*77.0-126*		*05/14/2019 13:16*	WG1280417
(S) 1,2-Dichloroethane-d4	*88.9*		*70.0-130*		*05/14/2019 13:16*	WG1280417

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/14/2019 13:37	WG1280417
Toluene	ND		0.00100	1	05/14/2019 13:37	WG1280417
Ethylbenzene	ND		0.00100	1	05/14/2019 13:37	WG1280417
Total Xylenes	ND		0.00300	1	05/14/2019 13:37	WG1280417
(S) Toluene-d8	*96.8*		*80.0-120*		*05/14/2019 13:37*	WG1280417
(S) a,a,a-Trifluorotoluene	*106*		*80.0-120*		*05/14/2019 13:37*	WG1280417
(S) 4-Bromofluorobenzene	*90.9*		*77.0-126*		*05/14/2019 13:37*	WG1280417
(S) 1,2-Dichloroethane-d4	*88.0*		*70.0-130*		*05/14/2019 13:37*	WG1280417

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/14/2019 13:58	WG1280417
Toluene	0.00461		0.00100	1	05/14/2019 13:58	WG1280417
Ethylbenzene	ND		0.00100	1	05/14/2019 13:58	WG1280417
Total Xylenes	ND		0.00300	1	05/14/2019 13:58	WG1280417
(S) Toluene-d8	*97.0*		*80.0-120*		*05/14/2019 13:58*	WG1280417
(S) a,a,a-Trifluorotoluene	*104*		*80.0-120*		*05/14/2019 13:58*	WG1280417
(S) 4-Bromofluorobenzene	*91.4*		*77.0-126*		*05/14/2019 13:58*	WG1280417
(S) 1,2-Dichloroethane-d4	*88.8*		*70.0-130*		*05/14/2019 13:58*	WG1280417

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0110		0.00500	5	05/14/2019 14:19	WG1280417
Toluene	ND		0.00500	5	05/14/2019 14:19	WG1280417
Ethylbenzene	0.109		0.00500	5	05/14/2019 14:19	WG1280417
Total Xylenes	0.162		0.0150	5	05/14/2019 14:19	WG1280417
(S) Toluene-d8	*95.3*		*80.0-120*		*05/14/2019 14:19*	WG1280417
(S) a,a,a-Trifluorotoluene	*107*		*80.0-120*		*05/14/2019 14:19*	WG1280417
(S) 4-Bromofluorobenzene	*90.7*		*77.0-126*		*05/14/2019 14:19*	WG1280417
(S) 1,2-Dichloroethane-d4	*93.5*		*70.0-130*		*05/14/2019 14:19*	WG1280417

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	ND		0.000100	2	05/14/2019 18:58	WG1280391
Acenaphthene	0.000289		0.000100	2	05/14/2019 18:58	WG1280391
Acenaphthylene	ND		0.000100	2	05/14/2019 18:58	WG1280391
Benzo(a)anthracene	0.000102		0.000100	2	05/14/2019 18:58	WG1280391
Benzo(a)pyrene	ND		0.000100	2	05/14/2019 18:58	WG1280391
Benzo(b)fluoranthene	ND		0.000100	2	05/14/2019 18:58	WG1280391
Benzo(g,h,i)perylene	ND		0.000100	2	05/14/2019 18:58	WG1280391
Benzo(k)fluoranthene	ND		0.000100	2	05/14/2019 18:58	WG1280391
Chrysene	ND		0.000100	2	05/14/2019 18:58	WG1280391
Dibenz(a,h)anthracene	ND		0.000100	2	05/14/2019 18:58	WG1280391
Dibenzofuran	0.00120		0.000100	2	05/14/2019 18:58	WG1280391
Fluoranthene	ND		0.000100	2	05/14/2019 18:58	WG1280391
Fluorene	0.000805		0.000100	2	05/14/2019 18:58	WG1280391
Indeno(1,2,3-cd)pyrene	ND		0.000100	2	05/14/2019 18:58	WG1280391
Naphthalene	0.00997		0.000500	2	05/14/2019 18:58	WG1280391
Phenanthrene	0.00100		0.000100	2	05/14/2019 18:58	WG1280391
Pyrene	0.000158		0.000100	2	05/14/2019 18:58	WG1280391
1-Methylnaphthalene	0.00813		0.000500	2	05/14/2019 18:58	WG1280391
2-Methylnaphthalene	0.00582		0.000500	2	05/14/2019 18:58	WG1280391
2-Chloronaphthalene	ND		0.000500	2	05/14/2019 18:58	WG1280391
(S) Nitrobenzene-d5	*67.9*		*31.0-160*		*05/14/2019 18:58*	WG1280391
(S) 2-Fluorobiphenyl	*60.5*		*48.0-148*		*05/14/2019 18:58*	WG1280391
(S) p-Terphenyl-d14	*177*	J1	*37.0-146*		*05/14/2019 18:58*	WG1280391

Sample Narrative:

L1097774-08 WG1280391: Dilution due to matrix impact during extraction procedure

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	0.0438		0.00500	5	05/17/2019 10:18	WG1282619
Toluene	0.0380		0.00500	5	05/17/2019 10:18	WG1282619
Ethylbenzene	0.174		0.00500	5	05/17/2019 10:18	WG1282619
Total Xylenes	0.441		0.0150	5	05/17/2019 10:18	WG1282619
(S) Toluene-d8	*94.9*		*80.0-120*		*05/17/2019 10:18*	WG1282619
(S) a,a,a-Trifluorotoluene	*0.000*	J2	*80.0-120*		*05/17/2019 10:18*	WG1282619
(S) 4-Bromofluorobenzene	*98.5*		*77.0-126*		*05/17/2019 10:18*	WG1282619
(S) 1,2-Dichloroethane-d4	*128*		*70.0-130*		*05/17/2019 10:18*	WG1282619

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00500	5	05/17/2019 10:38	WG1282619
Toluene	0.00685		0.00500	5	05/17/2019 10:38	WG1282619
Ethylbenzene	0.142		0.00500	5	05/17/2019 10:38	WG1282619
Total Xylenes	0.373		0.0150	5	05/17/2019 10:38	WG1282619
(S) Toluene-d8	*93.7*		*80.0-120*		*05/17/2019 10:38*	WG1282619
(S) a,a,a-Trifluorotoluene	*0.000*	J2	*80.0-120*		*05/17/2019 10:38*	WG1282619
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*05/17/2019 10:38*	WG1282619
(S) 1,2-Dichloroethane-d4	*128*		*70.0-130*		*05/17/2019 10:38*	WG1282619

Sample Narrative:

L1097774-10 WG1282619: Non-target compounds too high to run at a lower dilution.

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Acenaphthene	0.000261		0.0000500	1	05/14/2019 19:20	WG1280391
Acenaphthylene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Benzo(a)anthracene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Benzo(a)pyrene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Benzo(b)fluoranthene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Benzo(g,h,i)perylene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Benzo(k)fluoranthene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Chrysene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Dibenz(a,h)anthracene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Dibenzofuran	0.00159		0.0000500	1	05/14/2019 19:20	WG1280391
Fluoranthene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Fluorene	0.000935		0.0000500	1	05/14/2019 19:20	WG1280391
Indeno(1,2,3-cd)pyrene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
Naphthalene	0.0157		0.000250	1	05/14/2019 19:20	WG1280391
Phenanthrene	0.000717		0.0000500	1	05/14/2019 19:20	WG1280391
Pyrene	ND		0.0000500	1	05/14/2019 19:20	WG1280391
1-Methylnaphthalene	0.0128		0.000250	1	05/14/2019 19:20	WG1280391
2-Methylnaphthalene	0.00989		0.000250	1	05/14/2019 19:20	WG1280391
2-Chloronaphthalene	ND		0.000250	1	05/14/2019 19:20	WG1280391
(S) Nitrobenzene-d5	*137*		*31.0-160*		*05/14/2019 19:20*	WG1280391
(S) 2-Fluorobiphenyl	*70.5*		*48.0-148*		*05/14/2019 19:20*	WG1280391
(S) p-Terphenyl-d14	*107*		*37.0-146*		*05/14/2019 19:20*	WG1280391

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/14/2019 15:22	WG1280417
Toluene	ND		0.00100	1	05/14/2019 15:22	WG1280417
Ethylbenzene	ND		0.00100	1	05/14/2019 15:22	WG1280417
Total Xylenes	ND		0.00300	1	05/14/2019 15:22	WG1280417
(S) Toluene-d8	*99.3*		*80.0-120*		*05/14/2019 15:22*	WG1280417
(S) a,a,a-Trifluorotoluene	*106*		*80.0-120*		*05/14/2019 15:22*	WG1280417
(S) 4-Bromofluorobenzene	*94.7*		*77.0-126*		*05/14/2019 15:22*	WG1280417
(S) 1,2-Dichloroethane-d4	*87.1*		*70.0-130*		*05/14/2019 15:22*	WG1280417

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/14/2019 15:43	WG1280417
Toluene	ND		0.00100	1	05/14/2019 15:43	WG1280417
Ethylbenzene	ND		0.00100	1	05/14/2019 15:43	WG1280417
Total Xylenes	ND		0.00300	1	05/14/2019 15:43	WG1280417
(S) Toluene-d8	*98.1*		*80.0-120*		*05/14/2019 15:43*	WG1280417
(S) a,a,a-Trifluorotoluene	*105*		*80.0-120*		*05/14/2019 15:43*	WG1280417
(S) 4-Bromofluorobenzene	*93.5*		*77.0-126*		*05/14/2019 15:43*	WG1280417
(S) 1,2-Dichloroethane-d4	*86.3*		*70.0-130*		*05/14/2019 15:43*	WG1280417

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/14/2019 16:03	WG1280417
Toluene	ND		0.00100	1	05/14/2019 16:03	WG1280417
Ethylbenzene	0.00363		0.00100	1	05/14/2019 16:03	WG1280417
Total Xylenes	ND		0.00300	1	05/14/2019 16:03	WG1280417
(S) Toluene-d8	*99.9*		*80.0-120*		*05/14/2019 16:03*	WG1280417
(S) a,a,a-Trifluorotoluene	*106*		*80.0-120*		*05/14/2019 16:03*	WG1280417
(S) 4-Bromofluorobenzene	*95.4*		*77.0-126*		*05/14/2019 16:03*	WG1280417
(S) 1,2-Dichloroethane-d4	*86.6*		*70.0-130*		*05/14/2019 16:03*	WG1280417

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0624		0.00500	5	05/14/2019 16:24	WG1280417
Toluene	0.00759		0.00500	5	05/14/2019 16:24	WG1280417
Ethylbenzene	0.126		0.00500	5	05/14/2019 16:24	WG1280417
Total Xylenes	0.247		0.0150	5	05/14/2019 16:24	WG1280417
(S) Toluene-d8	*102*		*80.0-120*		*05/14/2019 16:24*	WG1280417
(S) a,a,a-Trifluorotoluene	*108*		*80.0-120*		*05/14/2019 16:24*	WG1280417
(S) 4-Bromofluorobenzene	*94.2*		*77.0-126*		*05/14/2019 16:24*	WG1280417
(S) 1,2-Dichloroethane-d4	*88.3*		*70.0-130*		*05/14/2019 16:24*	WG1280417

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Acenaphthene	0.000401		0.0000500	1	05/14/2019 19:41	WG1280391
Acenaphthylene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Benzo(a)anthracene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Benzo(a)pyrene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Benzo(b)fluoranthene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Benzo(g,h,i)perylene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Benzo(k)fluoranthene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Chrysene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Dibenz(a,h)anthracene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Dibenzofuran	0.00294		0.0000500	1	05/14/2019 19:41	WG1280391
Fluoranthene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Fluorene	0.00186		0.0000500	1	05/14/2019 19:41	WG1280391
Indeno(1,2,3-cd)pyrene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
Naphthalene	0.0177		0.000250	1	05/14/2019 19:41	WG1280391
Phenanthrene	0.00119		0.0000500	1	05/14/2019 19:41	WG1280391
Pyrene	ND		0.0000500	1	05/14/2019 19:41	WG1280391
1-Methylnaphthalene	0.0264		0.000250	1	05/14/2019 19:41	WG1280391
2-Methylnaphthalene	0.0112		0.000250	1	05/14/2019 19:41	WG1280391
2-Chloronaphthalene	ND		0.000250	1	05/14/2019 19:41	WG1280391
(S) Nitrobenzene-d5	*156*		*31.0-160*		*05/14/2019 19:41*	WG1280391
(S) 2-Fluorobiphenyl	*76.8*		*48.0-148*		*05/14/2019 19:41*	WG1280391
(S) p-Terphenyl-d14	*112*		*37.0-146*		*05/14/2019 19:41*	WG1280391

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	05/14/2019 16:45	WG1280417
Toluene	ND		0.00100	1	05/14/2019 16:45	WG1280417
Ethylbenzene	ND		0.00100	1	05/14/2019 16:45	WG1280417
Total Xylenes	ND		0.00300	1	05/14/2019 16:45	WG1280417
(S) Toluene-d8	*103*		*80.0-120*		*05/14/2019 16:45*	WG1280417
(S) a,a,a-Trifluorotoluene	*109*		*80.0-120*		*05/14/2019 16:45*	WG1280417
(S) 4-Bromofluorobenzene	*95.3*		*77.0-126*		*05/14/2019 16:45*	WG1280417
(S) 1,2-Dichloroethane-d4	*94.5*		*70.0-130*		*05/14/2019 16:45*	WG1280417

Method Blank (MB)

(MB) R3412044-3 05/14/19 10:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*101*			*80.0-120*
(S) a,a,a-Trifluorotoluene	*107*			*80.0-120*
(S) 4-Bromofluorobenzene	*91.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*89.7*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3412044-1 05/14/19 09:25 • (LCSD) R3412044-2 05/14/19 09:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0252	0.0244	101	97.6	70.0-123			3.30	20
Ethylbenzene	0.0250	0.0247	0.0248	98.9	99.3	79.0-123			0.322	20
Toluene	0.0250	0.0240	0.0241	95.9	96.4	79.0-120			0.549	20
Xylenes, Total	0.0750	0.0764	0.0740	102	98.7	79.0-123			3.19	20
(S) Toluene-d8				*99.5*	*99.2*	*80.0-120*				
(S) a,a,a-Trifluorotoluene				*107*	*107*	*80.0-120*				
(S) 4-Bromofluorobenzene				*91.6*	*87.6*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*103*	*97.3*	*70.0-130*				

Method Blank (MB)

(MB) R3412354-2 05/17/19 02:58

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*99.0*			*80.0-120*
(S) a,a,a-Trifluorotoluene	*0.000*	J2		*80.0-120*
(S) 4-Bromofluorobenzene	*94.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3412354-3 05/17/19 06:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0250	0.0210	84.0	70.0-123	
Ethylbenzene	0.0250	0.0227	91.0	79.0-123	
Toluene	0.0250	0.0210	84.1	79.0-120	
Xylenes, Total	0.0750	0.0674	89.9	79.0-123	
(S) Toluene-d8			*97.8*	*80.0-120*	
(S) a,a,a-Trifluorotoluene			*0.000*	*80.0-120*	J2
(S) 4-Bromofluorobenzene			*92.8*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*118*	*70.0-130*	

Method Blank (MB)

(MB) R3411373-3 05/14/19 13:52

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000140	0.0000500
Acenaphthene	U		0.0000100	0.0000500
Acenaphthylene	U		0.0000120	0.0000500
Benzo(a)anthracene	U		0.00000410	0.0000500
Benzo(a)pyrene	U		0.0000116	0.0000500
Benzo(b)fluoranthene	U		0.00000212	0.0000500
Benzo(g,h,i)perylene	U		0.00000227	0.0000500
Benzo(k)fluoranthene	U		0.0000136	0.0000500
Chrysene	U		0.0000108	0.0000500
Dibenz(a,h)anthracene	U		0.00000396	0.0000500
Fluoranthene	U		0.0000157	0.0000500
Fluorene	U		0.00000850	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000148	0.0000500
Naphthalene	U		0.0000198	0.000250
Phenanthrene	U		0.00000820	0.0000500
Pyrene	U		0.0000117	0.0000500
1-Methylnaphthalene	U		0.00000821	0.000250
2-Methylnaphthalene	U		0.00000902	0.000250
2-Chloronaphthalene	U		0.00000647	0.000250
Dibenzofuran	0.00000333	J	0.00000105	0.0000500
(S) Nitrobenzene-d5	*108*			*31.0-160*
(S) 2-Fluorobiphenyl	*71.5*			*48.0-148*
(S) p-Terphenyl-d14	*90.5*			*37.0-146*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3411373-1 05/14/19 13:09 • (LCSD) R3411373-2 05/14/19 13:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Dibenzofuran	0.00200	0.00168	0.00174	84.0	87.0	67.0-134			3.51	20
Anthracene	0.00200	0.00203	0.00209	102	105	67.0-150			2.91	20
Acenaphthene	0.00200	0.00175	0.00182	87.5	91.0	65.0-138			3.92	20
Acenaphthylene	0.00200	0.00182	0.00186	91.0	93.0	66.0-140			2.17	20
Benzo(a)anthracene	0.00200	0.00176	0.00184	88.0	92.0	61.0-140			4.44	20
Benzo(a)pyrene	0.00200	0.00184	0.00191	92.0	95.5	60.0-143			3.73	20
Benzo(b)fluoranthene	0.00200	0.00185	0.00197	92.5	98.5	58.0-141			6.28	20
Benzo(g,h,i)perylene	0.00200	0.00179	0.00187	89.5	93.5	52.0-153			4.37	20
Benzo(k)fluoranthene	0.00200	0.00192	0.00189	96.0	94.5	58.0-148			1.57	20
Chrysene	0.00200	0.00200	0.00205	100	102	64.0-144			2.47	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3411373-1 05/14/19 13:09 • (LCSD) R3411373-2 05/14/19 13:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Dibenz(a,h)anthracene	0.00200	0.00180	0.00188	90.0	94.0	52.0-155			4.35	20
Fluoranthene	0.00200	0.00199	0.00210	99.5	105	69.0-153			5.38	20
Fluorene	0.00200	0.00158	0.00164	79.0	82.0	64.0-136			3.73	20
Indeno(1,2,3-cd)pyrene	0.00200	0.00185	0.00192	92.5	96.0	54.0-153			3.71	20
Naphthalene	0.00200	0.00162	0.00170	81.0	85.0	61.0-137			4.82	20
Phenanthrene	0.00200	0.00177	0.00179	88.5	89.5	62.0-137			1.12	20
Pyrene	0.00200	0.00187	0.00196	93.5	98.0	60.0-142			4.70	20
1-Methylnaphthalene	0.00200	0.00149	0.00163	74.5	81.5	66.0-142			8.97	20
2-Methylnaphthalene	0.00200	0.00147	0.00157	73.5	78.5	62.0-136			6.58	20
2-Chloronaphthalene	0.00200	0.00161	0.00167	80.5	83.5	64.0-140			3.66	20
(S) Nitrobenzene-d5				*108*	*110*	*31.0-160*				
(S) 2-Fluorobiphenyl				*67.0*	*68.5*	*48.0-148*				
(S) p-Terphenyl-d14				*93.0*	*93.0*	*37.0-146*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

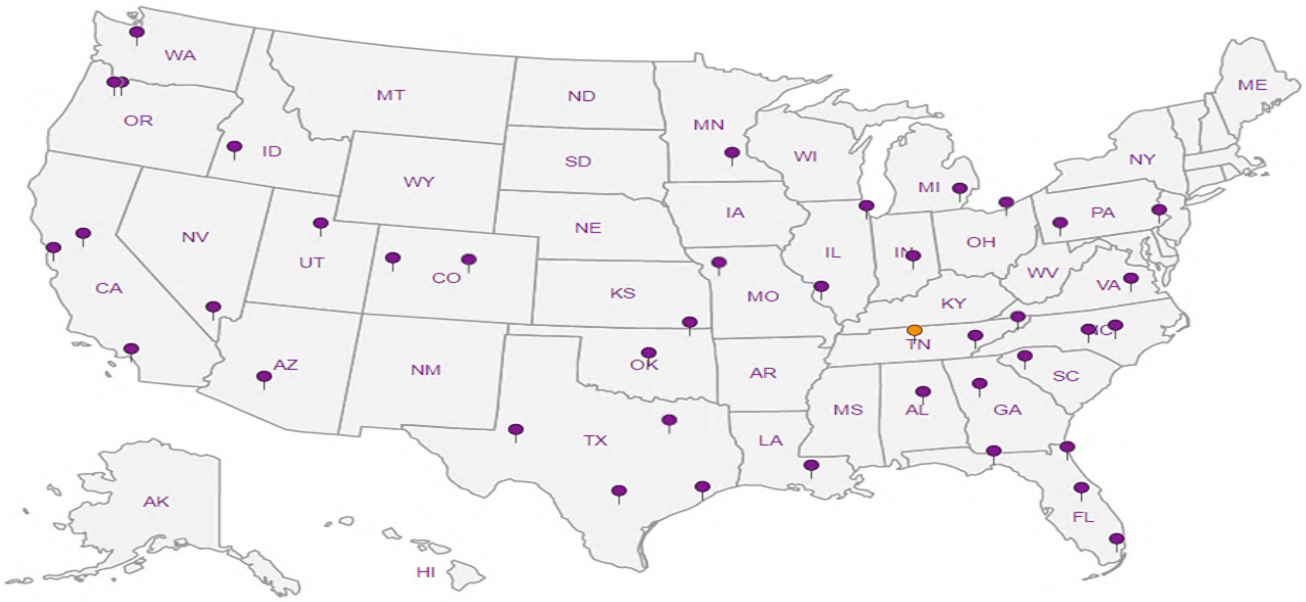
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Plains All American Pipeline - Entech

21 Waterway Ave., Suite 300
The Woodlands, TX 77380

Billing Information:
Accounts Payable
333 Clay St., Ste 1600
Houston, TX 77002

Pres Chk

Report to: Kathleen Buxton

Email To: kathleen.buxton@entechservice.com, cjbryant@paalp.com

Project Description: Vac to Jal#5

City/State Collected:

Phone: 979-997-2338
Fax:

Client Project # PAA12015

Lab Project # PLAINSENT-VAC5

Collected by (print): SHANE DILLEY

Site/Facility ID # SRS - 2003-00134

P.O. #

Collected by (signature): Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAHSIMLVI 40mlAmb-NoPres-WT	V8260BTEX 40mlAmb-HCl
mw1		GW		5-8-19	1200	2	X	X
mw2		GW			1250	2		
mw3		GW			1645	2		
mw4		GW			1345	2		
mw5		GW			1705	2		
mw6		GW			1710	2		
mw7		GW			1425	2		
RW1		GW			1610	4	X	
RW2		GW			1700	2		
RW3		GW		5-8-19	1505	4	X	X

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # 1097774

E086

Acctnum: PLAINSENT
Template: T94130
Prelogin: P707766
TSR: 134 - Mark W. Beasley
PB:
Shipped Via:

Remarks	Sample # (lab only)
	-01
	-02
	-03
	-04
	-05
	-06
	-07
	-08
	-09
	-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: RAD SCREEN: <0.5 mR/hr

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: Y __N
Bottles arrive intact: Y __N
Correct bottles used: Y __N
Sufficient volume sent: Y __N
If Applicable
VOA Zero Headspace: Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	5-9-19	1200	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) B Maxwell

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 1.4c 1.0 1.4c °C
Bottles Received: 36

Date: 5/10/19 Time: 0800

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Plains All American Pipeline - Entech

21 Waterway Ave., Suite 300
The Woodlands, TX 77380

Billing Information:
Accounts Payable
333 Clay St., Ste 1600
Houston, TX 77002

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **Kathleen Buxton**

Email To: kathleen.buxton@entechservice.com, cjbryant@paalp.com

Project Description: **Vac to Jal#5**

City/State Collected:

Phone: **979-997-2338**
Fax:

Client Project # **PAA12015**

Lab Project # **PLAINSENT-VAC5**

Collected by (print): SHANE DILLER

Site/Facility ID # **SRS - 2003-00134**

P.O. #

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

L# L1097774

Table #

Acctnum: **PLAINSENT**
Template: **T94130**
Prelogin: **P707766**
TSR: **134 - Mark W. Beasley**
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAHSIMLVI 40mlAmb-NoPres-WT	V8260BTEX 40mlAmb-HCl								Remarks	Sample # (lab only)
RW5		GW		5-8	1650	2		X									-11
RW6		GW		↓	1700	2		↓									-12
RW7		GW		↓	1655	2		↓									-13
RW8		GW		↓	1715	4	X	↓									-14
RW4		GW		5-8-19	1640	2		X									-15
		GW															
		GW															
		GW															
		GW															
		GW															

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ________

Remarks: RAD SCREEN: <0.5 mR/hr

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ______

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP _Y _N
COC Signed/Accurate: ✓Y _N
Bottles arrive intact: ✓Y _N
Correct bottles used: ✓Y _N
Sufficient volume sent: ✓Y _N
If Applicable
VOA Zero Headspace: ✓Y _N
Preservation Correct/Checked: _Y _N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR
[signature]	5-9-19	1200	LK Rountree	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.4°+0=1.4° °C Bottles Received: 36
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) B Maxwell	Date: 5/10/19 Time: 0800

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

September 05, 2019

Plains All American Pipeline - Entech

Sample Delivery Group:	L1132369
Samples Received:	08/23/2019
Project Number:	PAA12015
Description:	Vac to Jal#5
Site:	SRS - 2003-00134
Report To:	Kathleen Buxton 21 Waterway Ave., Suite 300 The Woodlands, TX 77380

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

TABLE OF CONTENTS

MW1 L1132369-01 GW

Collected by: Chris Sanchez | Collected date/time: 08/22/19 11:15 | Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 14:43	08/30/19 14:43	JAH	Mt. Juliet, TN

MW2 L1132369-02 GW

Collected by: Chris Sanchez | Collected date/time: 08/22/19 11:10 | Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 15:04	08/30/19 15:04	JAH	Mt. Juliet, TN

MW3 L1132369-03 GW

Collected by: Chris Sanchez | Collected date/time: 08/22/19 10:50 | Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 15:24	08/30/19 15:24	JAH	Mt. Juliet, TN

MW4 L1132369-04 GW

Collected by: Chris Sanchez | Collected date/time: 08/22/19 10:55 | Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 15:44	08/30/19 15:44	JAH	Mt. Juliet, TN

MW5 L1132369-05 GW

Collected by: Chris Sanchez | Collected date/time: 08/22/19 10:30 | Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 16:05	08/30/19 16:05	JAH	Mt. Juliet, TN

MW6 L1132369-06 GW

Collected by: Chris Sanchez | Collected date/time: 08/22/19 11:05 | Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 16:25	08/30/19 16:25	JAH	Mt. Juliet, TN

MW7 L1132369-07 GW

Collected by: Chris Sanchez | Collected date/time: 08/22/19 11:20 | Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 16:45	08/30/19 16:45	JAH	Mt. Juliet, TN

RW4 L1132369-08 GW

Collected by: Chris Sanchez | Collected date/time: 08/22/19 11:00 | Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 17:05	08/30/19 17:05	JAH	Mt. Juliet, TN

RW5 L1132369-09 GW

Collected by: Chris Sanchez
Collected date/time: 08/22/19 10:45
Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 17:26	08/30/19 17:26	JAH	Mt. Juliet, TN

RW6 L1132369-10 GW

Collected by: Chris Sanchez
Collected date/time: 08/22/19 10:35
Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 17:46	08/30/19 17:46	JAH	Mt. Juliet, TN

RW7 L1132369-11 GW

Collected by: Chris Sanchez
Collected date/time: 08/22/19 10:40
Received date/time: 08/23/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1337746	1	08/30/19 18:06	08/30/19 18:06	JAH	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	08/30/2019 14:43	WG1337746
Toluene	ND		0.00100	1	08/30/2019 14:43	WG1337746
Ethylbenzene	ND		0.00100	1	08/30/2019 14:43	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 14:43	WG1337746
(S) Toluene-d8	*100*		*80.0-120*		*08/30/2019 14:43*	WG1337746
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*08/30/2019 14:43*	WG1337746
(S) 1,2-Dichloroethane-d4	*112*		*70.0-130*		*08/30/2019 14:43*	WG1337746

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	08/30/2019 15:04	WG1337746
Toluene	ND		0.00100	1	08/30/2019 15:04	WG1337746
Ethylbenzene	ND		0.00100	1	08/30/2019 15:04	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 15:04	WG1337746
(S) Toluene-d8	*104*		*80.0-120*		*08/30/2019 15:04*	WG1337746
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*08/30/2019 15:04*	WG1337746
(S) 1,2-Dichloroethane-d4	*109*		*70.0-130*		*08/30/2019 15:04*	WG1337746

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	08/30/2019 15:24	WG1337746
Toluene	ND		0.00100	1	08/30/2019 15:24	WG1337746
Ethylbenzene	ND		0.00100	1	08/30/2019 15:24	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 15:24	WG1337746
(S) Toluene-d8	*105*		*80.0-120*		*08/30/2019 15:24*	WG1337746
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*08/30/2019 15:24*	WG1337746
(S) 1,2-Dichloroethane-d4	*112*		*70.0-130*		*08/30/2019 15:24*	WG1337746

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	08/30/2019 15:44	WG1337746
Toluene	ND		0.00100	1	08/30/2019 15:44	WG1337746
Ethylbenzene	ND		0.00100	1	08/30/2019 15:44	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 15:44	WG1337746
(S) Toluene-d8	*104*		*80.0-120*		*08/30/2019 15:44*	WG1337746
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*08/30/2019 15:44*	WG1337746
(S) 1,2-Dichloroethane-d4	*109*		*70.0-130*		*08/30/2019 15:44*	WG1337746

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	08/30/2019 16:05	WG1337746
Toluene	ND		0.00100	1	08/30/2019 16:05	WG1337746
Ethylbenzene	ND		0.00100	1	08/30/2019 16:05	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 16:05	WG1337746
(S) Toluene-d8	*101*		*80.0-120*		*08/30/2019 16:05*	WG1337746
(S) 4-Bromofluorobenzene	*106*		*77.0-126*		*08/30/2019 16:05*	WG1337746
(S) 1,2-Dichloroethane-d4	*110*		*70.0-130*		*08/30/2019 16:05*	WG1337746

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	08/30/2019 16:25	WG1337746
Toluene	ND		0.00100	1	08/30/2019 16:25	WG1337746
Ethylbenzene	ND		0.00100	1	08/30/2019 16:25	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 16:25	WG1337746
(S) Toluene-d8	*104*		*80.0-120*		*08/30/2019 16:25*	WG1337746
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*08/30/2019 16:25*	WG1337746
(S) 1,2-Dichloroethane-d4	*109*		*70.0-130*		*08/30/2019 16:25*	WG1337746

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	08/30/2019 16:45	WG1337746
Toluene	ND		0.00100	1	08/30/2019 16:45	WG1337746
Ethylbenzene	ND		0.00100	1	08/30/2019 16:45	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 16:45	WG1337746
(S) Toluene-d8	*103*		*80.0-120*		*08/30/2019 16:45*	WG1337746
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*08/30/2019 16:45*	WG1337746
(S) 1,2-Dichloroethane-d4	*110*		*70.0-130*		*08/30/2019 16:45*	WG1337746

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	08/30/2019 17:05	WG1337746
Toluene	ND		0.00100	1	08/30/2019 17:05	WG1337746
Ethylbenzene	ND		0.00100	1	08/30/2019 17:05	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 17:05	WG1337746
(S) Toluene-d8	*102*		*80.0-120*		*08/30/2019 17:05*	WG1337746
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*08/30/2019 17:05*	WG1337746
(S) 1,2-Dichloroethane-d4	*108*		*70.0-130*		*08/30/2019 17:05*	WG1337746

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	08/30/2019 17:26	WG1337746
Toluene	ND		0.00100	1	08/30/2019 17:26	WG1337746
Ethylbenzene	ND		0.00100	1	08/30/2019 17:26	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 17:26	WG1337746
(S) Toluene-d8	*102*		*80.0-120*		*08/30/2019 17:26*	WG1337746
(S) 4-Bromofluorobenzene	*104*		*77.0-126*		*08/30/2019 17:26*	WG1337746
(S) 1,2-Dichloroethane-d4	*115*		*70.0-130*		*08/30/2019 17:26*	WG1337746

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	08/30/2019 17:46	WG1337746
Toluene	ND		0.00100	1	08/30/2019 17:46	WG1337746
Ethylbenzene	ND		0.00100	1	08/30/2019 17:46	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 17:46	WG1337746
(S) Toluene-d8	*102*		*80.0-120*		*08/30/2019 17:46*	WG1337746
(S) 4-Bromofluorobenzene	*106*		*77.0-126*		*08/30/2019 17:46*	WG1337746
(S) 1,2-Dichloroethane-d4	*112*		*70.0-130*		*08/30/2019 17:46*	WG1337746

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	08/30/2019 18:06	WG1337746
Toluene	ND		0.00100	1	08/30/2019 18:06	WG1337746
Ethylbenzene	0.00122		0.00100	1	08/30/2019 18:06	WG1337746
Total Xylenes	ND		0.00300	1	08/30/2019 18:06	WG1337746
(S) Toluene-d8	*103*		*80.0-120*		*08/30/2019 18:06*	WG1337746
(S) 4-Bromofluorobenzene	*105*		*77.0-126*		*08/30/2019 18:06*	WG1337746
(S) 1,2-Dichloroethane-d4	*112*		*70.0-130*		*08/30/2019 18:06*	WG1337746

Method Blank (MB)

(MB) R3446106-4 08/30/19 10:51

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*104*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3446106-1 08/30/19 09:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0250	0.0268	107	70.0-123	
Ethylbenzene	0.0250	0.0280	112	79.0-123	
Toluene	0.0250	0.0269	108	79.0-120	
Xylenes, Total	0.0750	0.0853	114	79.0-123	
(S) Toluene-d8			*103*	*80.0-120*	
(S) 4-Bromofluorobenzene			*107*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*110*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

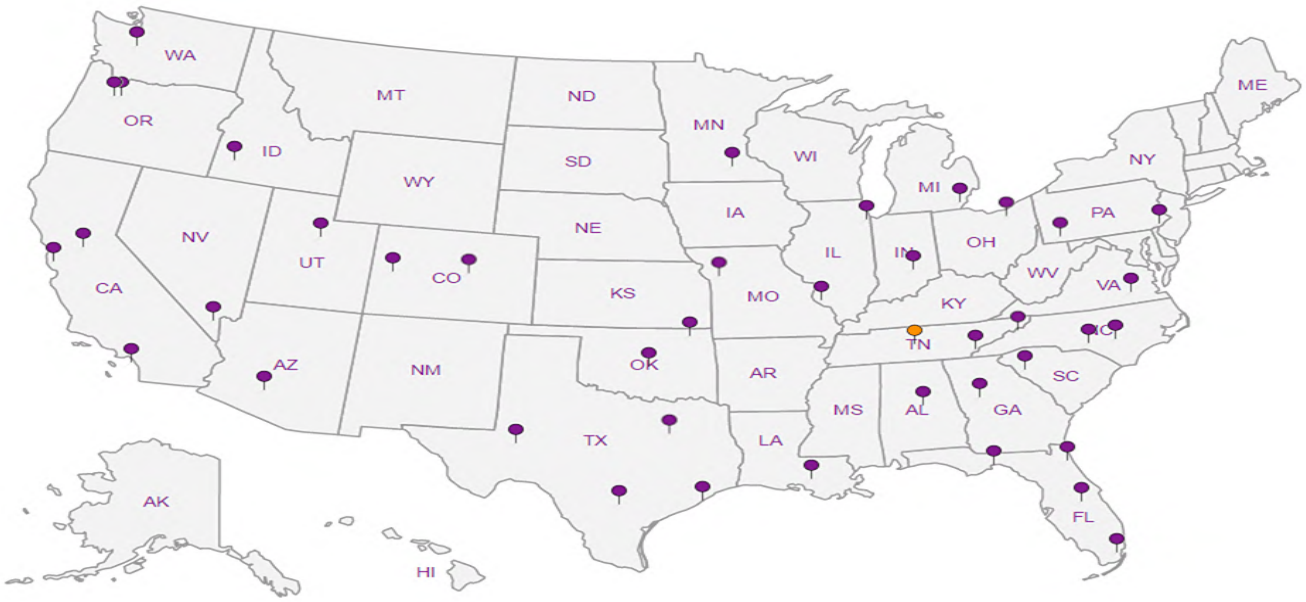
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Plains All American Pipeline - Entech

21 Waterway Ave., Suite 300
The Woodlands, TX 77380

Billing Information:
Accounts Payable
333 Clay St., Ste 1600
Houston, TX 77002

Pres Chk

Report to: Kathleen Buxton

Email To: kathleen.buxton@entechservice.com, cjbryant@paalp.com

Project Description: Vac to Jal#5

City/State Collected: EUNICE / NM

Phone: 979-997-2338
Fax:

Client Project # PAA12015

Lab Project # PLAINSENT-VAC5

Collected by (print): CHRIS SANCHEZ

Site/Facility ID # SRS - 2003-00134

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L1132369

D104

Acctnum: PLAINSENT
Template: T94130
Prelogin: P707766
TSR: 134 - Mark W. Beasley
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAHSIMLVI 40mlAmb-NoPres-WT	V8260BTEX 40mlAmb-HCl	Remarks	Sample # (lab only)
MW1		GW		8-22-19	1115	2		X		-01
MW2		GW			1110					-02
MW3		GW			1050					-03
MW4		GW			1055					-04
MW5		GW			1030					-05
MW6		GW			1105					-06
MW7		GW			1120					-07
RW4		GW			1100					-08
RW5		GW			1045					-09
RW6		GW		8-22-19	1035	2		X		-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

RAD SCREEN: <0.5 mR/hr

pH ____ Temp ____

Flow ____ Other ____

Samples returned via: ___ UPS ___ FedEx ___ Courier SVA

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP ___Y ___N
COC Signed/Accurate: ___Y ___N
Bottles arrive intact: ___Y ___N
Correct bottles used: ___Y ___N
Sufficient volume sent: ___Y ___N
If Applicable
VOA Zero Headspace: ___Y ___N
Preservation Correct/Checked: ___Y ___N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	8-22-19	15:30			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.5 °C 9.2+.1=20.1	Bottles Received: 22
	8-22-19	17:00	SVA		
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/23/19	Time: 0800

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

[redacted]

Plains All American Pipeline - Entech

21 Waterway Ave., Suite 300
The Woodlands, TX 77380

Billing Information:
Accounts Payable
333 Clay St., Ste 1600
Houston, TX 77002

Pres Chk

Report to: Kathleen Buxton

Email To: kathleen.buxton@entechservice.com, cjbryant@paalp.com

Project Description: Vac to Jal#5

City/State Collected: Eunice/NM

Phone: 979-997-2338
Fax:

Client Project # PAA12015

Lab Project # PLAINSENT-VAC5

Collected by (print): Chris Sanchez

Site/Facility ID # SRS - 2003-00134

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately
Packed on Ice N___ Y ✓

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAHSIMLVI 40mlAmb-NoPres-WT	V8260BTEX 40mlAmb-HCl								Remarks	Sample # (lab only)
RW7		GW		8-22-19	1040	2		X									11
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

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National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L1132369

Table #

Acctnum: PLAINSENT
Template: T94130
Prelogin: P707766
TSR: 134 - Mark W. Beasley
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

RAD SCREEN: <0.5 mR/hr

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier SVA

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes (No) HCL / MeoH TBR	If preservation required by Login: Date/Time
	8.22.19	15:30			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.5°C Bottles Received: 22	
	8.22.19	17:00	SVA	0.2-1201	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/23/19 Time: 0800	Hold: Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

November 15, 2019

Plains All American Pipeline - Entech

Sample Delivery Group:	L1158995
Samples Received:	11/08/2019
Project Number:	PAA12015
Description:	Vac to Jal#5
Site:	SRS - 2003-00134
Report To:	Kathleen Buxton 21 Waterway Ave., Suite 300 The Woodlands, TX 77380

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

TABLE OF CONTENTS

MW1 L1158995-01 GW

Collected by: Chris Sanchez | Collected date/time: 11/06/19 14:20 | Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 18:35	11/13/19 18:35	CMJ	Mt. Juliet, TN

MW2 L1158995-02 GW

Collected by: Chris Sanchez | Collected date/time: 11/06/19 14:10 | Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 18:54	11/13/19 18:54	CMJ	Mt. Juliet, TN

MW3 L1158995-03 GW

Collected by: Chris Sanchez | Collected date/time: 11/06/19 13:40 | Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 19:15	11/13/19 19:15	CMJ	Mt. Juliet, TN

MW4 L1158995-04 GW

Collected by: Chris Sanchez | Collected date/time: 11/06/19 13:50 | Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 19:32	11/13/19 19:32	CMJ	Mt. Juliet, TN

MW5 L1158995-05 GW

Collected by: Chris Sanchez | Collected date/time: 11/06/19 13:30 | Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 19:51	11/13/19 19:51	CMJ	Mt. Juliet, TN

MW6 L1158995-06 GW

Collected by: Chris Sanchez | Collected date/time: 11/06/19 14:00 | Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 20:11	11/13/19 20:11	CMJ	Mt. Juliet, TN

MW7 L1158995-07 GW

Collected by: Chris Sanchez | Collected date/time: 11/06/19 14:30 | Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 20:30	11/13/19 20:30	CMJ	Mt. Juliet, TN

RW1 L1158995-08 GW

Collected by: Chris Sanchez | Collected date/time: 11/06/19 15:20 | Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	5	11/13/19 20:49	11/13/19 20:49	CMJ	Mt. Juliet, TN

RW4 L1158995-09 GW

Collected by: Chris Sanchez
Collected date/time: 11/06/19 14:40
Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 21:08	11/13/19 21:08	CMJ	Mt. Juliet, TN

RW5 L1158995-10 GW

Collected by: Chris Sanchez
Collected date/time: 11/06/19 15:00
Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 21:27	11/13/19 21:27	CMJ	Mt. Juliet, TN

RW6 L1158995-11 GW

Collected by: Chris Sanchez
Collected date/time: 11/06/19 15:10
Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 21:46	11/13/19 21:46	CMJ	Mt. Juliet, TN

RW7 L1158995-12 GW

Collected by: Chris Sanchez
Collected date/time: 11/06/19 14:50
Received date/time: 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1380041	1	11/13/19 22:05	11/13/19 22:05	CMJ	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	11/13/2019 18:35	WG1380041
Toluene	ND		0.00100	1	11/13/2019 18:35	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 18:35	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 18:35	WG1380041
(S) Toluene-d8	*102*		*80.0-120*		*11/13/2019 18:35*	WG1380041
(S) 4-Bromofluorobenzene	*93.9*		*77.0-126*		*11/13/2019 18:35*	WG1380041
(S) 1,2-Dichloroethane-d4	*111*		*70.0-130*		*11/13/2019 18:35*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	11/13/2019 18:54	WG1380041
Toluene	ND		0.00100	1	11/13/2019 18:54	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 18:54	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 18:54	WG1380041
(S) Toluene-d8	*103*		*80.0-120*		*11/13/2019 18:54*	WG1380041
(S) 4-Bromofluorobenzene	*97.9*		*77.0-126*		*11/13/2019 18:54*	WG1380041
(S) 1,2-Dichloroethane-d4	*114*		*70.0-130*		*11/13/2019 18:54*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/13/2019 19:15	WG1380041
Toluene	ND		0.00100	1	11/13/2019 19:15	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 19:15	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 19:15	WG1380041
(S) Toluene-d8	*103*		*80.0-120*		*11/13/2019 19:15*	WG1380041
(S) 4-Bromofluorobenzene	*97.2*		*77.0-126*		*11/13/2019 19:15*	WG1380041
(S) 1,2-Dichloroethane-d4	*118*		*70.0-130*		*11/13/2019 19:15*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	11/13/2019 19:32	WG1380041
Toluene	ND		0.00100	1	11/13/2019 19:32	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 19:32	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 19:32	WG1380041
(S) Toluene-d8	*103*		*80.0-120*		*11/13/2019 19:32*	WG1380041
(S) 4-Bromofluorobenzene	*95.3*		*77.0-126*		*11/13/2019 19:32*	WG1380041
(S) 1,2-Dichloroethane-d4	*115*		*70.0-130*		*11/13/2019 19:32*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	11/13/2019 19:51	WG1380041
Toluene	ND		0.00100	1	11/13/2019 19:51	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 19:51	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 19:51	WG1380041
(S) Toluene-d8	*103*		*80.0-120*		*11/13/2019 19:51*	WG1380041
(S) 4-Bromofluorobenzene	*95.7*		*77.0-126*		*11/13/2019 19:51*	WG1380041
(S) 1,2-Dichloroethane-d4	*113*		*70.0-130*		*11/13/2019 19:51*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/13/2019 20:11	WG1380041
Toluene	ND		0.00100	1	11/13/2019 20:11	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 20:11	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 20:11	WG1380041
(S) Toluene-d8	*104*		*80.0-120*		*11/13/2019 20:11*	WG1380041
(S) 4-Bromofluorobenzene	*96.3*		*77.0-126*		*11/13/2019 20:11*	WG1380041
(S) 1,2-Dichloroethane-d4	*114*		*70.0-130*		*11/13/2019 20:11*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	11/13/2019 20:30	WG1380041
Toluene	ND		0.00100	1	11/13/2019 20:30	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 20:30	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 20:30	WG1380041
(S) Toluene-d8	*103*		*80.0-120*		*11/13/2019 20:30*	WG1380041
(S) 4-Bromofluorobenzene	*96.1*		*77.0-126*		*11/13/2019 20:30*	WG1380041
(S) 1,2-Dichloroethane-d4	*117*		*70.0-130*		*11/13/2019 20:30*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00500	5	11/13/2019 20:49	WG1380041
Toluene	ND		0.00500	5	11/13/2019 20:49	WG1380041
Ethylbenzene	0.0245		0.00500	5	11/13/2019 20:49	WG1380041
Total Xylenes	0.0928		0.0150	5	11/13/2019 20:49	WG1380041
(S) Toluene-d8	*102*		*80.0-120*		*11/13/2019 20:49*	WG1380041
(S) 4-Bromofluorobenzene	*101*		*77.0-126*		*11/13/2019 20:49*	WG1380041
(S) 1,2-Dichloroethane-d4	*114*		*70.0-130*		*11/13/2019 20:49*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/13/2019 21:08	WG1380041
Toluene	ND		0.00100	1	11/13/2019 21:08	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 21:08	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 21:08	WG1380041
(S) Toluene-d8	*102*		*80.0-120*		*11/13/2019 21:08*	WG1380041
(S) 4-Bromofluorobenzene	*96.1*		*77.0-126*		*11/13/2019 21:08*	WG1380041
(S) 1,2-Dichloroethane-d4	*118*		*70.0-130*		*11/13/2019 21:08*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	11/13/2019 21:27	WG1380041
Toluene	ND		0.00100	1	11/13/2019 21:27	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 21:27	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 21:27	WG1380041
(S) Toluene-d8	*103*		*80.0-120*		*11/13/2019 21:27*	WG1380041
(S) 4-Bromofluorobenzene	*97.8*		*77.0-126*		*11/13/2019 21:27*	WG1380041
(S) 1,2-Dichloroethane-d4	*118*		*70.0-130*		*11/13/2019 21:27*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	11/13/2019 21:46	WG1380041
Toluene	ND		0.00100	1	11/13/2019 21:46	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 21:46	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 21:46	WG1380041
(S) Toluene-d8	*103*		*80.0-120*		*11/13/2019 21:46*	WG1380041
(S) 4-Bromofluorobenzene	*96.3*		*77.0-126*		*11/13/2019 21:46*	WG1380041
(S) 1,2-Dichloroethane-d4	*115*		*70.0-130*		*11/13/2019 21:46*	WG1380041

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	11/13/2019 22:05	WG1380041
Toluene	ND		0.00100	1	11/13/2019 22:05	WG1380041
Ethylbenzene	ND		0.00100	1	11/13/2019 22:05	WG1380041
Total Xylenes	ND		0.00300	1	11/13/2019 22:05	WG1380041
(S) Toluene-d8	*102*		*80.0-120*		*11/13/2019 22:05*	WG1380041
(S) 4-Bromofluorobenzene	*96.3*		*77.0-126*		*11/13/2019 22:05*	WG1380041
(S) 1,2-Dichloroethane-d4	*113*		*70.0-130*		*11/13/2019 22:05*	WG1380041

Method Blank (MB)

(MB) R3472416-2 11/13/19 16:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*101*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.6*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*116*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3472416-1 11/13/19 15:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00532	106	70.0-123	
Ethylbenzene	0.00500	0.00487	97.4	79.0-123	
Toluene	0.00500	0.00501	100	79.0-120	
Xylenes, Total	0.0150	0.0146	97.3	79.0-123	
(S) Toluene-d8			*101*	*80.0-120*	
(S) 4-Bromofluorobenzene			*98.6*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*116*	*70.0-130*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

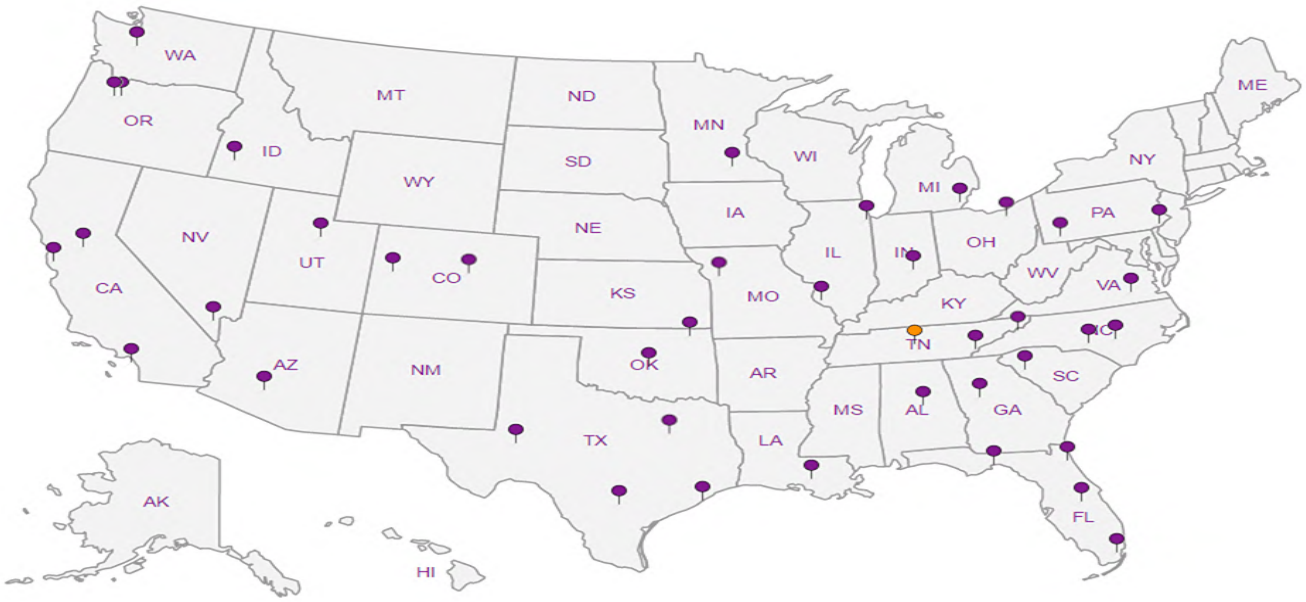
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Plains All American Pipeline - Entech

21 Waterway Ave., Suite 300
The Woodlands, TX 77380

Billing Information:
Accounts Payable
333 Clay St., Ste 1600
Houston, TX 77002

Pres Chk

Analysis / Container / Preservative: PAHSIMLVI 40mlAmb-NoPres-WT; V8260BTEX 40mlAmb-HCl

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **Kathleen Buxton**

Email To: **kathleen.buxton@entechservice.com, cjbryant@paalp.com**

Project Description: **Vac to Jal#5**

City/State Collected: EUNICE NM

L# 1158995

I012

Phone: **979-997-2338**
Fax:

Client Project # **PAA12015**

Lab Project # **PLAINSENT-VAC5**

Collected by (print): CHRIS SANCHEZ

Site/Facility ID # **SRS - 2003-00134**

P.O. #

Acctnum: **PLAINSENT**
Template: **T94130**
Prelogin: **P707766**
TSR: **134 - Mark W. Beasley**
PB:
Shipped Via:

Collected by (signature): [signature]

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAHSIMLVI 40mlAmb-NoPres-WT	V8260BTEX 40mlAmb-HCl	Remarks	Sample # (lab only)
MW1		GW		11-6-19	1420	2		X		-01
MW2		GW		↑	1410					-02
MW3		GW			1340					-03
MW4		GW			1350					-04
MW5		GW			1330					-05
MW6		GW			1400					-06
MW7		GW			1430					-07
RW1		GW			1520					-08
RW4		GW		↓	1440					-09
RW5		GW		11-6-19	1500					-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ________

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ______

Tracking # 1338 3338 6024

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)		
[signature]	11-6-19	1200	[signature]	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date: 11-7-19	Time: 8:41	Received by: (Signature) Hilario Hamdo Pace	Temp: 1.8+1-1.9 °C Bottles Received: 23	If preservation required by Login: Date/Time
Relinquished by : (Signature) Flores H Pace	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 11-8-19 Time: 0845	Hold: Condition: NCF / OK

Plains All American Pipeline - Entech

21 Waterway Ave., Suite 300
The Woodlands, TX 77380

Billing Information:
Accounts Payable
333 Clay St., Ste 1600
Houston, TX 77002

Report to: Kathleen Buxton

Email To: kathleen.buxton@entechservice.com, cjbryant@paalp.com

Project Description: Vac to Jal#5

City/State Collected: Eunice NM

Phone: 979-997-2338
Fax:

Client Project # PAA12015

Lab Project # PLAINSENT-VAC5

Collected by (print): Chris Sanchez

Site/Facility ID # SRS - 2003-00134

P.O. #

Collected by (signature):

Quote #

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	PAHSIMLVI 40mlAmb-NoPres-WT	V8260BTEX 40mlAmb-HCl								Remarks	Sample # (lab only)
RW6		GW		11-6-19	1510	7		X									-11
RW7		GW		11-6-19	1450	2		X									-12
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															
		GW															

Chain of Custody Page 2 of 2

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 1158995

Table #

Acctnum: PLAINSENT
Template: T94130
Prelogin: P707766
TSR: 134 - Mark W. Beasley
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	11-6-19	12:00			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
	11-7-19	8:41	Hiwot Hamdi Pace	1.8 1.1 = 1.0 23	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold:
Thomas H Pace				11-8-19 0845	Condition: NCF / OK

Troy Dunlap

Pace Analytical®
National Center for Testing & Innovation

Login #: L1158995	Client: PLAINSENT	Date:11/08/19	Evaluated by:Cole Medley

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Temperature not in range		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	pH not in range.		Please specify TCLP requested.	X	Improper handling by carrier (FedEx)/ UPS / Co
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
X	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments:Received 1 broken V8260BTEX 40mlAmb-HCl vial on ID RW6.

Client informed by:		Call		Email		Voice Mail		Date: 11/11/19	Time: 1100
TSR Initials: MB	Client Contact:								

Login Instructions:

Run from unbroken vial

Appendix B

2019 MDPE report prepared by Talon

talonlpe.com • 866.742.0742

TALON LPE

MOBILE DUAL PHASE EXTRACTION REPORT
VACUUM TO JAL 14 INCH MAINLINE 5 PIPELINE RELEASE
LEA COUNTY, NEW MEXICO
SRS # 2003-00134
NMOCD#1R-0464
2019 MDPE Events

PREPARED FOR:
PLAINS PIPELINE, L.P.
333 CLAY STREET
SUITE 1600
HOUSTON, TEXAS 77002

PREPARED BY:
TALON/LPE
921 N. BIVINS
AMARILLO, TEXAS 79107

DISTRIBUTION:
COPY 1 - PLAINS MARKETING, L.P. – DENVER CITY
COPY 2 - PLAINS MARKETING, L.P. – HOUSTON

January 17, 2020

TABLE OF CONTENTS

Section Page

Attachments:

I. MDPE SUMMARY REPORT AND WASTE DISPOSITION

A. MDPE Results

The following report summarizes data collected during the 12-hour High Vacuum Multi-Phase Extraction (MDPE) events conducted during 2019 at the Vacuum to Jal 14 Inch Mainline 5 Pipeline release site, located in Lea County, New Mexico. The objective of the MDPE treatments was to remove both vapor and liquid phase separated hydrocarbons (PSH) from onsite groundwater wells. Talon/LPE utilized an MDPE unit which consisted of an SVE extraction pump capable of generating vacuum up to 25" hg. Off gas vapors extracted from the extraction wells were destroyed using a propane-fired 1000-SCFM thermal oxidizer capable of processing 172.96 lbs/hr of gasoline.

A total of 36 hours (1.5 days) of PSH recovery was performed on RW-8.

Prior to and immediately following the events, the groundwater wells were gauged for groundwater elevation and PSH. Depth to groundwater ranges were measured in feet below the top of casing. Refer to Attachment 1 for a summary of data collected during the MDPE events.

The volume of PSH removed during the MDPE events is shown to reflect the portions of PSH in the liquid phase and as off-gas vapor. Air removal rates were calculated from velocity measurements recorded at the influent manifold prior to entry into the MDPE unit. PSH recovery and air flow data has been detailed and is contained in Table 1. Influent air samples were collected over the course of the events. These samples were submitted for laboratory testing in order to compare the predicted vapor concentrations (based on field-screening or calculated based on fuel consumption) to the actual vapor concentrations. All influent samples were tested for Total-Gas Analysis (Hydrocarbon Composition) by GPA 2261-C6+. Laboratory analytical results can be found in Attachment 2.

Based on a combination of field vapor screening and collected laboratory samples, a combined estimated total of **29.82 equivalent gallons of PSH (Total)** were removed during the event. The combined volume of PSH was comprised of approximately **18 gallons of PSH (liquid phase)** and approximately **11.82 gallons as off-gas vapor**. The calculations used to estimate the off-gas vapor mass recovered reflect the mass of total hydrocarbons recovered and does not necessarily equate to an equal mass of the product released. The mass recovery calculations may be affected by variations in the specific gravity of hydrocarbon released, age of release, activity of aerobic and/or anaerobic processes, and site specific geochemical factors.

The cumulative air flow measurements for the MDPE events were calculated using a combination of field data measurements and Preso® B+ manufacturer provided

formulas. **Air flow rates extracted from the recovery wells averaged 106.96 SCFM** during the events.

B. Air Quality

Influent air samples were collected during the events. These samples were submitted for laboratory testing in order to compare the predicted vapor concentrations (based on field-screening or calculated based on fuel consumption) to the actual vapor concentrations. The maximum influent concentration was recorded as 17,280 ppmv for Hydrocarbon Composition. Laboratory analytical results can be found in Attachment 2.

C. Waste Management and Disposition

A cumulative total of 2,920 gallons of fluid were generated during the events. The fluids were temporarily transferred to an on-site storage tank prior to being transferred to an authorized disposal facility.

II. SYSTEM OPERATION DATA AND MASS RECOVERY CALCULATIONS

Formulae:

$$\text{Concentration (C\_mg/l)} = \frac{\text{C ppmv x Mol. wt. in mg(estimated) x 1000 x 0.000001}}{\text{0.0821 x Temp (K)}}$$

$$\text{Recovery Rate (lbs/hr)} = \frac{\text{(C mg/l) x 2.2 x (Flowrate) x 60 x 28.32}}{\text{1,000,000}}$$

Recovery (lbs) = (lbs/hr) x (hrs)

$$\text{Correction Factor (CF)} = \frac{\text{FID Reading(ppmv)}}{\text{FID Reading at Time of Laboratory Analysis}}$$

$$\frac{\text{8.34 lbs}}{\text{gallon water}} \times \text{0.82 average specific gravity of light crude (estimated)} = \frac{\text{6.84 lbs light crude}}{\text{gallon}}$$

Table 1 December 2019

System Operation Data and Mass Recovery Calculations

Time	Period (hours)	Influent Temp. (°f)	Vacuum (In. hg)	Vacuum (In. h20)	Differential pressure (In. h20)	Flow (SCFM)	fID Readings (ppm)	Lab Result (ppmv)	Assigned Lab Result (ppmv)	Correction Factor (CF)	Adjusted Lab Result (ppmv)	Adjusted Lab Result (mg/L)	Recovery (lbs/hr)	Recovery in Period (lbs)	Total Recovery (lbs)
17:00	1	54	18.0	244.96	28.6	119.93	50000	1760.00	1760.00	1.00	1760	2.11	0.95	0.95	0.95
18:00	1	54	18.0	244.96	29.7	122.21	50000	-	1760.00	1.00	1760	2.11	0.96	0.96	1.91
19:00	1	54	18.0	244.96	30.1	123.03	50000	-	1760.00	1.00	1760	2.11	0.97	0.97	2.88
20:00	1	54	18.0	244.96	29.9	122.62	50000	-	1760.00	1.00	1760	2.11	0.97	0.97	3.85
21:00	1	56	18.0	244.96	29.6	121.77	50000	-	1760.00	1.00	1760	2.10	0.96	0.96	4.80
22:00	1	56	18.0	244.96	29.1	120.74	50000	-	1760.00	1.00	1760	2.10	0.95	0.95	5.75
23:00	1	58	18.0	244.96	30.5	123.37	50000	-	730.00	1.00	730	0.87	0.40	0.40	6.15
0:00	1	60	18.0	244.96	29.5	121.10	50000	-	730.00	1.00	730	0.86	0.39	0.39	6.54
1:00	1	62	18.0	244.96	28.2	118.17	50000	-	730.00	1.00	730	0.86	0.38	0.38	6.92
2:00	1	66	18.0	244.96	29.6	120.61	50000	-	730.00	1.00	730	0.85	0.39	0.39	7.31
3:00	1	70	18.0	244.96	30.7	122.36	50000	730.00	730.00	1.00	730	0.85	0.39	0.39	7.70
4:00	1	72	18.0	244.96	31.2	123.12	50000	-	730.00	1.00	730	0.84	0.39	0.39	8.08
Averages:		59.67	18.00	244.96	29.73	121.59	50000.00						Total	8.08	

PSH Mass Recovered in Vapor Phase = 1.18 gallons

FID maximum Concentration = 50,000 PPM

Ex: Conversion from ppmv to mg/L (influent 1)

Measured Conc.	Molecular Wt.	Pressure	Gas Constant	Temp.	Temp.	Conc.
(ppmv)	(Grams)	(atm)	(atm.liter/K.mole)	(F)	(K)	(C_mg/l)
1760	28.0643	1	0.0821	54	285.222222	2.10930888

Inputs are the green values.
Calculated values are yellow.
Constants are purple values.
Outpus are the blue values.

Liquid-phase Hydrocarbon Recovery

∏ * r2 * h = volume

Total Hydrocarbon Recovery

PSH Mass Recovered in Vapor Phase =	8.08	lbs
	1.18	gallons
PSH Mass Recovered in Liquid Phase =	20.52	lbs
	3.00	gallons
TOTAL =	**28.60**	**lbs**
	4.18	**gallons**

Gallons removed determined at time of pick up

PSH Volume in Gallons=	3
PSH Mass in Pounds=	20.52

% Vol. Hydrocarbon to ppmv - Influent 1

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0		0.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0		0.00
Iso-Pentane (C4H12)	72.15	0		0.00
N-Pentane (C5H12)	72.15	0		0.00
Hexane+ (C6H14)	97.40	0.176		1760.00
			Total	**1760.00**

*Hexane+ is treated as 60% hexanes, 30 % heptanes, and 10 % octanes, as such its (0.6*93.1887)+(0.3*100.2019)+(0.1*114.2285) = 97.3966

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	99.8750
Methane (CH4)	16.0425	0.0000
Carbon Dioxide (CO2)	44.011	0.0720
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0000
Iso-Pentane (C4H12)	72.1488	0.0000
N-Pentane (C5H12)	72.1488	0.0000
Hexane+	97.3966	0.0530
	Total	100
	Calculated MW	**28.0643**

% Vol. Hydrocarbon to ppmv - Influent 2

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0		0.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0		0.00
Iso-Pentane (C4H12)	72.15	0		0.00
N-Pentane (C5H12)	72.15	0		0.00
Hexane+ (C6H14)	97.40	0.073		730.00
			Total	**730.00**

*Hexane+ is treated as 60% hexanes, 30 % heptanes, and 10 % octanes, as such its (0.6*93.1887)+(0.3*100.2019)+(0.1*114.2285) = 97.3966

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	99.9120
Methane (CH4)	16.0425	0.0000
Carbon Dioxide (CO2)	44.011	0.0660
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0000
Iso-Pentane (C4H12)	72.1488	0.0000
N-Pentane (C5H12)	72.1488	0.0000
Hexane+	97.3966	0.0220
	Total	100
	Calculated MW	**28.0418**

Calculated MW= $\frac{\text{sum (individual component MW x their reported mol\%)}}{100}$

ppmv= **% Vol x 10,000**

Table 1 September 2019

System Operation Data and Mass Recovery Calculations

Time	Period (hours)	Influent Temp. (°f)	Vacuum (In. hg)	Vacuum (In. h20)	Differential pressure (In. h20)	Flow (SCFM)	fID Readings (ppm)	Lab Result (ppmv)	Assigned Lab Result (ppmv)	Correction Factor (CF)	Adjusted Lab Result (ppmv)	Adjusted Lab Result (mg/L)	Recovery (lbs/hr)	Recovery in Period (lbs)	Total Recovery (lbs)
17:00	1	80	17.0	231.35	48.3	158.28	50000	4340.00	4340.00	1.00	4340	5.00	2.96	2.96	2.96
18:00	1	80	17.0	231.35	48.6	158.77	50000	-	4340.00	1.00	4340	5.00	2.97	2.97	5.93
19:00	1	80	17.0	231.35	48.8	159.10	50000	-	4340.00	1.00	4340	5.00	2.97	2.97	8.90
20:00	1	78	17.0	231.35	49.6	160.70	50000	-	4340.00	1.00	4340	5.02	3.01	3.01	11.91
21:00	1	76	17.0	231.35	50.1	161.81	50000	-	4340.00	1.00	4340	5.04	3.05	3.05	14.96
22:00	1	76	17.0	231.35	50.7	162.77	50000	-	4340.00	1.00	4340	5.04	3.06	3.06	18.02
23:00	1	72	17.0	231.35	51.3	164.35	50000	-	4760.00	1.00	4760	5.57	3.42	3.42	21.45
0:00	1	70	17.0	231.35	51.5	164.98	50000	-	4760.00	1.00	4760	5.59	3.45	3.45	24.90
1:00	1	70	17.0	231.35	51.6	165.14	50000	-	4760.00	1.00	4760	5.59	3.45	3.45	28.35
2:00	1	70	17.0	231.35	51.7	165.30	50000	-	4760.00	1.00	4760	5.59	3.46	3.46	31.80
3:00	1	70	17.0	231.35	52.4	166.41	50000	4760.00	4760.00	1.00	4760	5.59	3.48	3.48	35.28
4:00	1	70	17.0	231.35	52.6	166.73	50000	-	4760.00	1.00	4760	5.59	3.49	3.49	38.77
Averages:		74.33	17.00	231.35	50.60	162.86	50000.00						Total	38.77	

PSH Mass Recovered in Vapor Phase = 5.67 gallons

FID maximum Concentration = 50,000 PPM

Ex: Conversion from ppmv to mg/L (influent 1)

Measured Conc.	Molecular Wt.	Pressure	Gas Constant	Temp.	Temp.	Conc.
(ppmv)	(Grams)	(atm)	(atm.liter/K.mole)	(F)	(K)	(C_mg/l)
4340	28.3401	1	0.0821	80	299.666667	4.99929674

Inputs are the green values.
Calculated values are yellow.
Constants are purple values.
Outpus are the blue values.

Liquid-phase Hydrocarbon Recovery

∏ * r2 * h = volume

Total Hydrocarbon Recovery

PSH Mass Recovered in Vapor Phase =	38.77	lbs
	5.67	gallons
PSH Mass Recovered in Liquid Phase =	41.04	lbs
	6.00	gallons
TOTAL =	**79.81**	**lbs**
	11.67	**gallons**

Gallons removed determined at time of pick up

PSH Volume in Gallons=	6
PSH Mass in Pounds=	41.04

% Vol. Hydrocarbon to ppmv - Influent 1

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0		0.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0		0.00
Iso-Pentane (C4H12)	72.15	0.005		50.00
N-Pentane (C5H12)	72.15	0.008		80.00
Hexane+ (C6H14)	97.40	0.421		4210.00
			Total	**4340.00**

*Hexane+ is treated as 60% hexanes, 30 % heptanes, and 10 % octanes, as such its (0.6*93.1887)+(0.3*100.2019)+(0.1*114.2285) = 97.3966

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	98.4100
Methane (CH4)	16.0425	0.0000
Carbon Dioxide (CO2)	44.011	1.4570
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0000
Iso-Pentane (C4H12)	72.1488	0.0020
N-Pentane (C5H12)	72.1488	0.0030
Hexane+	97.3966	0.1280
	Total	100
	Calculated MW	**28.3401**

% Vol. Hydrocarbon to ppmv - Influent 2

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0		0.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0		0.00
Iso-Pentane (C4H12)	72.15	0.005		50.00
N-Pentane (C5H12)	72.15	0.008		80.00
Hexane+ (C6H14)	97.40	0.463		4630.00
			Total	**4760.00**

*Hexane+ is treated as 60% hexanes, 30 % heptanes, and 10 % octanes, as such its (0.6*93.1887)+(0.3*100.2019)+(0.1*114.2285) = 97.3966

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	98.2850
Methane (CH4)	16.0425	0.0000
Carbon Dioxide (CO2)	44.011	1.5690
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0000
Iso-Pentane (C4H12)	72.1488	0.0020
N-Pentane (C5H12)	72.1488	0.0030
Hexane+	97.3966	0.1410
	Total	100
	Calculated MW	**28.3670**

Calculated MW= $\frac{\text{sum (individual component MW x their reported mol\%)}}{100}$

ppmv= **% Vol x 10,000**

Table 1
System Operation Data and Mass Recovery Calculations

Time	Period (hours)	Influent Temp. (°f)	Vacuum (In. hg)	Vacuum (In. h20)	Differential pressure (In. h20)	Flow (SCFM)	fID Readings (ppm)	Lab Result (ppmv)	Assigned Lab Result (ppmv)	Correction Factor (CF)	Adjusted Lab Result (ppmv)	Adjusted Lab Result (mg/L)	Recovery (lbs/hr)	Recovery in Period (lbs)	Total Recovery (lbs)
16:00	1	88	19	258.57	3.2	37.19	50000	17090.00	17090.00	1.00	17090	20.16	2.80	2.80	2.80
17:00	1	88	19	258.57	3.1	36.61	50000	-	17090.00	1.00	17090	20.16	2.76	2.76	5.56
18:00	1	86	19	258.57	3.3	37.84	50000	-	17090.00	1.00	17090	20.24	2.86	2.86	8.43
19:00	1	84	19	258.57	2.8	34.92	50000	-	17090.00	1.00	17090	20.31	2.65	2.65	11.08
20:00	1	70	19	258.57	2.2	31.36	50000	-	17090.00	1.00	17090	20.85	2.44	2.44	13.52
21:00	1	70	19	258.57	2.1	30.64	50000	-	17090.00	1.00	17090	20.85	2.39	2.39	15.91
22:00	1	70	19	258.57	2.2	31.36	50000	-	17280.00	1.00	17280	21.08	2.47	2.47	18.38
23:00	1	70	19	258.57	2.5	33.43	50000	-	17280.00	1.00	17280	21.08	2.63	2.63	21.01
0:00	1	68	19	258.57	3.1	37.29	50000	-	17280.00	1.00	17280	21.16	2.95	2.95	23.96
1:00	1	68	19	258.57	3.6	40.19	50000	-	17280.00	1.00	17280	21.16	3.18	3.18	27.14
2:00	1	66	19	258.57	4.1	42.97	50000	17280.00	17280.00	1.00	17280	21.24	3.41	3.41	30.56
3:00	1	66	19	258.57	4.2	43.49	50000	-	17280.00	1.00	17280	21.24	3.45	3.45	34.01
Averages:		74.50	19.00	258.57	3.03	36.44	50000.00						Total	34.01	

PSH Mass Recovered in Vapor Phase = 4.97 gallons

FID maximum Concentration = 50,000 PPM

Ex: Conversion from ppmv to mg/L (influent 1)

Measured Conc.	Molecular Wt.	Pressure	Gas Constant	Temp.	Temp.	Conc.
(ppmv)	(Grams)	(atm)	(atm.liter/K.mole)	(F)	(K)	(C_mg/l)
17090	29.4586	1	0.0821	88	304.111111	20.1640699

Inputs are the green values.
Calculated values are yellow.
Constants are purple values.
Outpus are the blue values.

Liquid-phase Hydrocarbon Recovery

∏ * r2 * h = volume

Total Hydrocarbon Recovery

PSH Mass Recovered in Vapor Phase =	34.01	lbs
	4.97	gallons
PSH Mass Recovered in Liquid Phase =	61.56	lbs
	9.00	gallons
TOTAL =	**95.57**	**lbs**
	13.97	**gallons**

Gallons removed determined at time of pick up

PSH Volume in Gallons=	9
PSH Mass in Pounds=	61.56

% Vol. Hydrocarbon to ppmv - Influent 1

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0.682		6820.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0.004		40.00
Iso-Pentane (C4H12)	72.15	0.02		200.00
N-Pentane (C5H12)	72.15	0.012		120.00
Hexane+ (C6H14)	97.40	0.991		9910.00
			Total	**17090.00**

*Hexane+ is treated as 60% hexanes, 30 % heptanes, and 10 % octanes, as such its (0.6*93.1887)+(0.3*100.2019)+(0.1*114.2285) = 97.3966

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	89.8630
Methane (CH4)	16.0425	1.2510
Carbon Dioxide (CO2)	44.011	8.5580
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0020
Iso-Pentane (C4H12)	72.1488	0.0080
N-Pentane (C5H12)	72.1488	0.0050
Hexane+	97.3966	0.3130
	Total	100
	Calculated MW	**29.4586**

% Vol. Hydrocarbon to ppmv - Influent 2

Compound	Molecular Weight (g/mol)	% Vol	=	ppmv
Methane (CH4)	16.04	0.648		6480.00
Ethane (C2H6)	30.07	0		0.00
Propane (C3H8)	44.10	0		0.00
Iso-Butane (C4H10)	58.12	0		0.00
N-Butane (C4H10)	58.12	0.004		40.00
Iso-Pentane (C4H12)	72.15	0.02		200.00
N-Pentane (C5H12)	72.15	0.012		120.00
Hexane+ (C6H14)	97.40	1.044		10440.00
			Total	**17280.00**

*Hexane+ is treated as 60% hexanes, 30 % heptanes, and 10 % octanes, as such its (0.6*93.1887)+(0.3*100.2019)+(0.1*114.2285) = 97.3966

Molecular Weight Calculations

component	Molecular Weight (g/mol)	mol%
Nitrogen (N2)	28.016	90.0260
Methane (CH4)	16.0425	1.1890
Carbon Dioxide (CO2)	44.011	8.4400
Ethane (C2H6)	30.069	0.0000
Propane (C3H8)	44.0956	0.0000
Iso-Butane (C4H10)	58.1222	0.0000
N-Butane (C4H10)	58.1222	0.0020
Iso-Pentane (C4H12)	72.1488	0.0080
N-Pentane (C5H12)	72.1488	0.0050
Hexane+	97.3966	0.3300
	Total	100
	Calculated MW	**29.4589**

Calculated MW= $\frac{\text{sum (individual component MW x their reported mol\%)}}{100}$

ppmv= **% Vol x 10,000**

ATTACHMENT 1

MDPE Field Logs

MDPE FIELD NOTES					
Site Name:	Vac To Jal #5			Event #:	
Location:	Eunice, NM			Arrive at site:	1:30
Date:	12/13/2019				
Job#:	700376.130.21	LPST #:		Start Vac:	2:00
Phase:		Unit:	1107	Stop Vac:	14:00
Onsite Personnel:	L. Bridges & D. Armstrong			Leave Site:	14:30

GAUGING DATA							
WELL#	BEFORE			AFTER			COMMENTS
	PSH	GW	PSH-T	PSH	GW	PSH-T	
RW-8	49.35	49.40	0.05		50.47	0.00	STINGER @ 49'
WASTE:	H2O:	952		PSH:	3		TOTAL (GAL): 955

Sample Name		Analysis	Date:	Time:	Comments:	**Bottle #**	**Start Vac**	**End Vac**
INFLUENT	#1	C6t	13-Dec-19	3:00	FID = >50k			
INFLUENT	#2	C6t	13-Dec-19	13:00	FID = >50k			

Notes:	
Tank #1 T 37 1/8 PSH 37 T 955 PSH 3 H_2O 952	

Start Date: 12/13/2019		700376.130.21 Plains All American Pipeline, L.P. Vac to Jal#5 Eunice, NM (12HRS) 1107 Pg. 1 of 1										
		Well Flow						Well Data				
TIME	SAMPLE TAKEN	Inflent temp. (°f)	Diff. Pressure (INH20) 2" Preso	Vac (In.Hg)	FID Composite (PPM)	Propane (%-size) 500 Gal.	EXHAUST TEMP F	COMMENTS:				
								RW-8				
2:00								VAC (INH2O)	VAC (INH2O)	VAC (INH2O)	VAC (INH2O)	VAC (INH2O)
3:00	*	54	28.6	18.0	> 50k		1437	9.6				
4:00		54	29.7	18.0	> 50k		1439	9.5				
5:00		54	30.1	18.0	> 50k		1432	9.4				
6:00		54	29.9	18.0	> 50k		1436	9.3				
7:00		56	29.6	18.0	> 50k		1434	9.5				
8:00		56	29.1	18.0	> 50k		1435	9.6				
9:00		58	30.5	18.0	> 50k		1433	9.1				
10:00		60	29.5	18.0	> 50k		1434	9.7				
11:00		62	28.2	18.0	> 50k		1437	9.4				
12:00		66	29.6	18.0	> 50k		1435	9.9				
13:00	**	70	30.7	18.0	> 50k		1432	10.3				
14:00		72	31.2	18.0	> 50k		1433	10.2				

MDPE FIELD NOTES					
Site Name:	Vac To Jal #5			Event #:	
Location:	Eunice, NM			Arrive at site:	15:30
Date:	9/11/2019				
Job#:	700376.130.20	LPST #:		Start Vac:	16:00
Phase:		Unit:	1107	Stop Vac:	4:00
Onsite Personnel:	L. Bridges & D. Armstrong			Leave Site:	4:30

GAUGING DATA							
WELL#	BEFORE			AFTER			COMMENTS
	PSH	GW	PSH-T	PSH	GW	PSH-T	
RW-8	49.45	49.75	0.30		49.50	0.00	STINGER @ 49'
WASTE:	H2O:	946		PSH:	6		TOTAL (GAL): 952

Sample Name		Analysis	Date:	Time:	Comments:	**Bottle #**	**Start Vac**	**End Vac**
INFLUENT	#1	C6t	11-Sep-19	17:00	FID = >50k			
INFLUENT	#2	C6t	12-Sep-19	3:00	FID = >50k			

Notes:
Tank #1 T 37" PSH 36 3/4" T 952 PSH 6 H_2O 946
Contraded Entech = Noticfied onsite would like 24HRS notice
Propane: Start 58%
Finish 35%

Start Date: 9/11/2019		700376.130.20 Plains All American Pipeline, L.P. Vac to Jal#5 Eunice, NM (12HRS) 1107 Pg. 1 of 1										
		Well Flow						Well Data				
TIME	SAMPLE TAKEN	Inflent temp. (°f)	Diff. Pressure (INH20) 2" Preso	Vac (In.Hg)	FID Composite (PPM)	Propane (%-size) 500 Gal.	EXHAUST TEMP F	COMMENTS:				
								RW-8				
16:00								VAC (INH2O)	VAC (INH2O)	VAC (INH2O)	VAC (INH2O)	VAC (INH2O)
17:00	*	80	48.3	17.0	> 50k		1436	30.6				
18:00		80	48.6	17.0	> 50k		1433	30.3				
19:00		80	48.8	17.0	> 50k		1432	30.1				
20:00		78	49.6	17.0	> 50k		1434	30.9				
21:00		76	50.1	17.0	> 50k		1432	30.8				
22:00		76	50.7	17.0	> 50k		1430	31.2				
23:00		72	51.3	17.0	> 50k		1431	31.0				
0:00		70	51.5	17.0	> 50k		1433	30.8				
1:00		70	51.6	17.0	> 50k		1435	30.2				
2:00		70	51.7	17.0	> 50k		1431	30.6				
3:00	**	70	52.4	17.0	> 50k		1432	30.4				
4:00		70	52.6	17.0	> 50k		1430	30.1				

MDPE FIELD NOTES					
Site Name:	Vac To Jal #5			Event #:	
Location:	Eunice, NM			Arrive at site:	14:30
Date:	5/28/2019				
Job#:	700376.130.19	LPST #:		Start Vac:	15:00
Phase:		Unit:	1107	Stop Vac:	3:00
Onsite Personnel:	L. Bridges & D. Armstrong			Leave Site:	9:30

GAUGING DATA							
WELL#	BEFORE			AFTER			COMMENTS
	PSH	GW	PSH-T	PSH	GW	PSH-T	
RW-8	49.48	49.55	0.07		51.01	0.00	STINGER @ 47 (+2)
WASTE:	H2O:	1004		PSH:	9		TOTAL (GAL): 1013

Sample Name		Analysis	Date:	Time:	Comments:	**Bottle #**	**Start Vac**	**End Vac**
INFLUENT	#1	C6t	28-May-19	16:00	FID = >50k			
INFLUENT	#2	C6t	29-May-19	2:00	FID = >50k			

Notes:	
Tank #1 T 39 3/8" PSH 39" T 1013 PSH 9 H_2O 1004	
Propane Start 75% Finish 67%	

Start Date: 5/28/2019		700376.130.19 Plains All American Pipeline, L.P. Vac to Jal#5 Eunice, NM (12HRS) 1107 Pg. 1 of 1										
		Well Flow						Well Data				
TIME	SAMPLE TAKEN	Inflent temp. (°f)	Diff. Pressure (INH20) 2" Preso	Vac (In.Hg)	FID Composite (PPM)	Propane (%-size) 500 Gal.	EXHAUST TEMP F	COMMENTS:				
								RW-8				
15:00								VAC (INH2O)	VAC (INH2O)	VAC (INH2O)	VAC (INH2O)	VAC (INH2O)
16:00	*	88	3.2	19.0	> 50k		1437	25.7				
17:00		88	3.1	19.0	> 50k		1435	25.9				
18:00		86	3.3	19.0	> 50k		1436	25.8				
19:00		84	2.8	19.0	> 50k		1436	26.2				
20:00		70	2.2	19.0	> 50k		1437	26.3				
21:00		70	2.1	19.0	> 50k		1435	26.3				
22:00		70	2.2	19.0	> 50k		1434	26.1				
23:00		70	2.5	19.0	> 50k		1433	25.7				
0:00		68	3.1	19.0	> 50k		1432	25.8				
1:00		68	3.6	19.0	> 50k		1430	25.5				
2:00	**	66	4.1	19.0	> 50k		1431	25.2				
3:00		66	4.2	19.0	> 50k		1430	25.1				

ATTACHMENT 2

Laboratory Analytical Results

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Certificate of Analysis

Number: 1030-19120937-001A

Dec. 30, 2019

Jason Shubert
Talon/LPE
921 N Bivins
Amarillo, TX 79107

Station Name:	Influent # 1	Sampled By:	LB
Station Number:	700376.130.21	Sample Of:	Gas Spot
Station Location:	Eunice, NM	Sample Date:	12/13/2019 03:00
Sample Point:	Vac to Jal #5	Sample Conditions:	
Analyzed:	12/30/2019 14:45:06 by JD	Method:	GPA-2261M

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.65 psia		
Nitrogen	99.875	99.711		GPM TOTAL C2+	0.023
Methane	NIL	NIL		GPM TOTAL C3+	0.023
Carbon Dioxide	0.072	0.113		GPM TOTAL iC5+	0.023
Ethane	NIL	NIL	NIL		
Propane	NIL	NIL	NIL		
Iso-butane	NIL	NIL	NIL		
n-Butane	NIL	NIL	NIL		
Iso-pentane	NIL	NIL	NIL		
n-Pentane	NIL	NIL	NIL		
Hexanes Plus	0.053	0.176	0.023		
	100.000	100.000	0.023		

Calculated Physical Properties	Total	C6+
Relative Density Real Gas	0.9687	3.2176
Calculated Molecular Weight	28.06	93.19
Compressibility Factor	0.9997	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.65 psia & 60°F		
Real Gas Dry BTU	3	5113
Water Sat. Gas Base BTU	3	5024

Tom Berry

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Certificate of Analysis

Number: 1030-19120937-002A

Dec. 30, 2019

Jason Shubert
Talon/LPE
921 N Bivins
Amarillo, TX 79107

Station Name: Influent # 2
Station Number: 700376.130.21
Station Location: Eunice, NM
Sample Point: Vac to Jal #5
Analyzed: 12/30/2019 15:13:46 by JD

Sampled By: LB
Sample Of: Gas Spot
Sample Date: 12/13/2019 13:00
Sample Conditions:
Method: GPA-2261M

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.65 psia		
Nitrogen	99.912	99.823		GPM TOTAL C2+	0.010
Methane	NIL	NIL		GPM TOTAL C3+	0.010
Carbon Dioxide	0.066	0.104		GPM TOTAL iC5+	0.010
Ethane	NIL	NIL	NIL		
Propane	NIL	NIL	NIL		
Iso-butane	NIL	NIL	NIL		
n-Butane	NIL	NIL	NIL		
Iso-pentane	NIL	NIL	NIL		
n-Pentane	NIL	NIL	NIL		
Hexanes Plus	0.022	0.073	0.010		
	100.000	100.000	0.010		

Calculated Physical Properties	Total	C6+
Relative Density Real Gas	0.9680	3.2176
Calculated Molecular Weight	28.04	93.19
Compressibility Factor	0.9997	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.65 psia & 60°F		
Real Gas Dry BTU	1	5113
Water Sat. Gas Base BTU	1	5024

Tom Berry

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

SPL, Inc.

Analysis Request Chain of Custody Record

SPL	SPL Work Order No.:	SPL Work Order No.:	Acct. Mate Code:	Dept. Code	SPL Page 1 of 1	

Report To: (Company Name):	Talon LPE	Project/Station Name: Vacto Sal #5	Project/Station Number: 70376.130.21	Project/Station Location: Eunice NM	Requested TAT
Address	921 N. Bivins				☐ 24hr *
City/State/Zip	Amarillo, Texas 79107	Special Instructions:			☐ 48hr *
Contact:	Jason Shubert				☐ 72hr *
Phone:	806-467-0607 Fax: 806-467-0622				☐ Standard
Invoice To: (Company Name):	Talon LPE	Indicate Billing Type. Net 30 day Acct. ☐ Check # Cash Recv'd $			☐ Other Indicate Below
Address	921 N Bivins	Credit Card ☐ Contact SPL, Inc for CC payment arrangements.			
City/State/Zip	Amarillo, Texas 79107	* Terms: Cylinders will be rented for $10/cyl. All cylinders checked out are to be returned within 21 days, whether they contain sample or not. Cylinders not returned after 30 days will be considered lost and will be billed at current replacement cost.			
Contact:	Jason Shubert				
Phone:	806-467-0607 Fax: 806-467-0622				
PO / Ref. No.:					
Contract/Proposal #:					

NOPE Sample ID & Point	Sample Date	Sample Time	Sample Type (Gas/Liq. Solid)	Duplicate	Composite	Spot	Cylinder Tracking Info * Cylinder #	Date Out	Date In	Requested Analysis C6+	Comments
Influent #1	12-13	0300	GAS							✓	
Influent #2	12-13	1300	"							✓	

* Surcharges May Apply

Sampled By-Print Name: L. Bridges			Company Name:		
Signature:					
Relinquished By-Print Name: L. Bridges	Date: 12/13/19	Time:	Received By-Print Name:	Date:	Time:
Signature:			Signature:		
Relinquished By-Print Name:	Date:	Time:	Received By-Print Name:	Date:	Time:
Signature:			Signature:		
Relinquished By-Print Name:	Date:	Time:	Received By-Print Name:	Date:	Time:
Signature:			Signature:		

☒ 8820 Interchange Dr. Houston,TX 77054 (713) 660-0901
☐ 9221Highway 23 Belle Chasse, LA 70037 (504) 391-1337
☐ P.O. Box 3079 Laurel, MS 39442 (601) 428-0842
☐ 500 Ambassador Caffery Pkwy Scott, LA 70583 (337) 237-4775
☐ 1595 US 79 South Carthage, TX 75633 (903) 693-6242
☐ 459 Hughes Dr. Traverse City, MI 49686 (616) 947-5777

Note: As a convenience to our clients, this form is available in electronic format. Please contact one of our offices above for the form to be e-mailed to you.

Certificate of Analysis

Number: 1030-19090734-001A

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Jason Shubert
Talon/LPE
921 N Bivins
Amarillo, TX 79107

Sep. 20, 2019

Station Name: Influent # 1
Station Number: 700376.130.20
Station Location: Eunice, NM
Sample Point: Vac to Jal #5
Analyzed: 09/20/2019 08:40:42 by PW

Sampled By: LB
Sample Of: Gas Spot
Sample Date: 09/11/2019 17:00
Sample Conditions:
Method: GPA-2261M

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.65 psia
Nitrogen	98.410	97.303	
Methane	NIL	NIL	
Carbon Dioxide	1.457	2.263	
Ethane	NIL	NIL	NIL
Propane	NIL	NIL	NIL
Iso-butane	NIL	NIL	NIL
n-Butane	NIL	NIL	NIL
Iso-pentane	0.002	0.005	0.001
n-Pentane	0.003	0.008	0.001
Hexanes Plus	0.128	0.421	0.056
	100.000	100.000	0.058

GPM TOTAL C2+	0.058
GPM TOTAL C3+	0.058
GPM TOTAL iC5+	0.058

Calculated Physical Properties	Total	C6+
Relative Density Real Gas	0.9782	3.2176
Calculated Molecular Weight	28.33	93.19
Compressibility Factor	0.9997	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.65 psia & 60°F		
Real Gas Dry BTU	7	5113
Water Sat. Gas Base BTU	7	5024

Tom Berry

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Certificate of Analysis

Number: 1030-19090734-002A

Sep. 20, 2019

Jason Shubert
Talon/LPE
921 N Bivins
Amarillo, TX 79107

Station Name:	Influent # 2	Sampled By:	LB
Station Number:	700376.130.20	Sample Of:	Gas Spot
Station Location:	Eunice, NM	Sample Date:	09/12/2019 03:00
Sample Point:	Vac to Jal #5	Sample Conditions:	
Analyzed:	09/20/2019 08:54:00 by PW	Method:	GPA-2261M

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.65 psia		
Nitrogen	98.285	97.089		GPM TOTAL C2+	0.063
Methane	NIL	NIL		GPM TOTAL C3+	0.063
Carbon Dioxide	1.569	2.435		GPM TOTAL iC5+	0.063
Ethane	NIL	NIL	NIL		
Propane	NIL	NIL	NIL		
Iso-butane	NIL	NIL	NIL		
n-Butane	NIL	NIL	NIL		
Iso-pentane	0.002	0.005	0.001		
n-Pentane	0.003	0.008	0.001		
Hexanes Plus	0.141	0.463	0.061		
	100.000	100.000	0.063		

Calculated Physical Properties	Total	C6+
Relative Density Real Gas	0.9791	3.2176
Calculated Molecular Weight	28.36	93.19
Compressibility Factor	0.9997	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.65 psia & 60°F		
Real Gas Dry BTU	7	5113
Water Sat. Gas Base BTU	7	5024

Tom Berry

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

SPL, Inc.

Analysis Request Chain of Custody Record

SPL	SPL Work Order No.:	SPL Work Order No.:	Acct. Mate Code:	Dept. Code	SPL Page 1 of 1	
Report To: (Company Name): Talon LPE	Project/Station Name: Vacto Jal #5	Project/Station Number: 20376.130.20	Project/Station Location: Eunice NM		Requested TAT	
Address: 921 N. Bivins					☐ 24hr *	
City/State/Zip: Amarillo, Texas 79107	Special Instructions:				☐ 48hr *	
Contact: Jason Shubert					☐ 72hr *	
Phone: 806-467-0607 Fax: 806-467-0622					☐ Standard	
Invoice To: (Company Name): Talon LPE	Indicate Billing Type.	Net 30 day Acct. ☐	Check #	Cash Recv'd $	☐ Other Indicate Below	
Address: 921 N Bivins		Credit Card ☐	Contact SPL. Inc for CC payment arrangements.			
City/State/Zip: Amarillo, Texas 79107	* Terms: Cylinders will be rented for $10/cyl. All cylinders checked out are to be returned within 21 days, whether they contain sample or not. Cylinders not returned after 30 days will be considered lost and will be billed at current replacement cost.				RECEIVED SEP 18 2019 930	
Contact: Jason Shubert					* Surcharges May Apply	
Phone: 806-467-0607 Fax: 806-467-0622						
PO / Ref. No.:						
Contract/Proposal #:						

ADPE Sample ID & Point	Sample Date	Sample Time	Sample Type (Gas/Liq. Solid)	Duplicate	Composite	Spot	Cylinder Tracking Info * Cylinder #	Date Out	Date In	Requested Analysis C6+												Comments
Inlet #1	9-11-19	1700	GAS							✓												
Inlet #2	9-12-19	0300	"							✓												

Sampled By-Print Name: L Bridges Signature:			Company Name:	
Relinquished By-Print Name: L Bridges Signature:	Date: 9/11/19	Time:	Received By-Print Name: Signature:	Date: Time:
Relinquished By-Print Name: Signature:	Date:	Time:	Received By-Print Name: Signature:	Date: Time:
Relinquished By-Print Name: Signature:	Date:	Time:	Received By-Print Name: Signature: UR	Date: 9/18/19 Time:

☒ 8820 Interchange Dr. Houston,TX 77054 (713) 660-0901 ☐ 9121Highway 23 Belle Chasse, LA 70037 (504) 391-1337 ☐ P.O. Box 3079 Laurel, MS 39442 (601) 428-0842

☐ 500 Ambassador Caffery Pkwy Scott, LA 70583 (337) 237-4775 ☐ 1595 US 79 South Carthage, TX 75633 (903) 693-5242 ☐ 459 Hughes Dr. Traverse City, MI 49686 (616) 947-5777

Note: As a convenience to our clients, this form is available in an electronic format. Please contact one of our offices above for the form to be e-mailed to you.

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Certificate of Analysis

Number: 1030-19060121-001A

June 03, 2019

Jason Shubert
Talon/LPE
921 N Bivins
Amarillo, TX 79107

Station Name:	Influent # 1	Sampled By:	DA
Station Number:	700376.130.19	Sample Of:	Gas Spot
Station Location:	Eunice, NM	Sample Date:	05/28/2019 16:00
Sample Point:	Vac to Jal #5	Sample Conditions:	
Analyzed:	06/03/2019 13:58:07 by DK	Method:	GPA-2261M

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.65 psia		
Nitrogen	89.863	85.499		GPM TOTAL C2+	0.142
Methane	1.251	0.682		GPM TOTAL C3+	0.142
Carbon Dioxide	8.558	12.792		GPM TOTAL iC5+	0.141
Ethane	NIL	NIL	NIL		
Propane	NIL	NIL	NIL		
Iso-butane	NIL	NIL	NIL		
n-Butane	0.002	0.004	0.001		
Iso-pentane	0.008	0.020	0.003		
n-Pentane	0.005	0.012	0.002		
Hexanes Plus	0.313	0.991	0.136		
	100.000	100.000	0.142		

Calculated Physical Properties	Total	C6+
Relative Density Real Gas	1.0167	3.2176
Calculated Molecular Weight	29.44	93.19
Compressibility Factor	0.9995	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.65 psia & 60°F		
Real Gas Dry BTU	29	5113
Water Sat. Gas Base BTU	29	5024

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Certificate of Analysis

Number: 1030-19060121-002A

June 03, 2019

Jason Shubert
Talon/LPE
921 N Bivins
Amarillo, TX 79107

Station Name:	Influent # 2	Sampled By:	DA
Station Number:	700376.130.19	Sample Of:	Gas Spot
Station Location:	Eunice, NM	Sample Date:	05/29/2019 02:00
Sample Point:	Vac to Jal #5	Sample Conditions:	
Analyzed:	06/03/2019 14:11:28 by DK	Method:	GPA-2261M

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.65 psia		
Nitrogen	90.026	85.656		GPM TOTAL C2+	0.149
Methane	1.189	0.648		GPM TOTAL C3+	0.149
Carbon Dioxide	8.440	12.616		GPM TOTAL iC5+	0.148
Ethane	NIL	NIL	NIL		
Propane	NIL	NIL	NIL		
Iso-butane	NIL	NIL	NIL		
n-Butane	0.002	0.004	0.001		
Iso-pentane	0.008	0.020	0.003		
n-Pentane	0.005	0.012	0.002		
Hexanes Plus	0.330	1.044	0.143		
	100.000	100.000	0.149		

Calculated Physical Properties	Total	C6+
Relative Density Real Gas	1.0167	3.2176
Calculated Molecular Weight	29.44	93.19
Compressibility Factor	0.9995	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.65 psia & 60°F		
Real Gas Dry BTU	29	5113
Water Sat. Gas Base BTU	29	5024

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

SPL, Inc.

Analysis Request Chain of Custody Record

SPL	SPL Work Order No.:	SPL Work Order No.:	Acct. Mate Code:	Dept. Code	SPL	Page 1 of 1

Report To: (Company Name):	Talon LPE	Project/Station Name: Vacto Jn 15	Project/Station Number: 700376.130.19	Project/Station Location: Eunice NM	Requested TAT	
Address	921 N. Bivins				☐ 24hr*	
City/State/Zip	Amarillo, Texas 79107	Special Instructions:			☐ 48hr*	
Contact:	Jason Shubert				☐ 72hr*	
Phone:	806-467-0607 Fax: 806-467-0622					
Invoice To: (Company Name):	Talon LPE	Indicate Billing Type.	Net 30 day Acct. ☐	Check #	Cash Recv'd $	☐ Standard
Address	921 N Bivins		Credit Card ☐	Contact SPL, Inc for CC payment arrangements.		☐ Other Indicate Below
City/State/Zip	Amarillo, Texas 79107	* Terms: Cylinders will be rented for $10/cyl. All cylinders checked out are to be returned within 21 days, whether they contain sample or not. Cylinders not returned after 30 days will be considered lost and will be billed at current replacement cost.				
Contact:	Jason Shubert					
Phone:	806-467-0607 Fax: 806-467-0622					
PO / Ref. No.:						
Contract/Proposal #:						* Surcharges May Apply

Sample ID & Point	Sample Date	Sample Time	Sample Type (Gas/Liq. Solid)	Duplicate	Composite	Spot	Cylinder Tracking Info * Cylinder #	Date Out	Date In	Requested Analysis C6+	Comments
MDPE											
Intlunit#1	5-28-19	1600	Gas							✓	
Intlunit#2	5-29-19	0200	J							✓	

Sampled By-Print Name: D Armstrong	Company Name:						
Signature:							
Relinquished By-Print Name: D Armstrong	Date: 5/31/19	Time:	Received By-Print Name: Dunia Guillen	Date: 6-3-19	Time:		
Signature:							
Relinquished By-Print Name:	Date:	Time:	Received By-Print Name:	Date:	Time:		
Signature:							
Relinquished By-Print Name:	Date:	Time:	Received By-Print Name:	Date:	Time:		
Signature:							

☒ 8820 Interchange Dr. Houston, TX 77054 (713) 660-0901	☐ 9221 Highway 23 Belle Chasse, LA 70037 (504) 391-1337	☐ P.O. Box 3079 Laurel, MS 39442 (601) 428-0842			
☐ 500 Ambassador Caffery Pkwy Scott, LA 70583 (337) 237-4775	☐ 1585 US 79 South Carthage, TX 75633 (903) 693-6242	☐ 459 Hughes Dr. Traverse City, MI 49686 (615) 947-5777			

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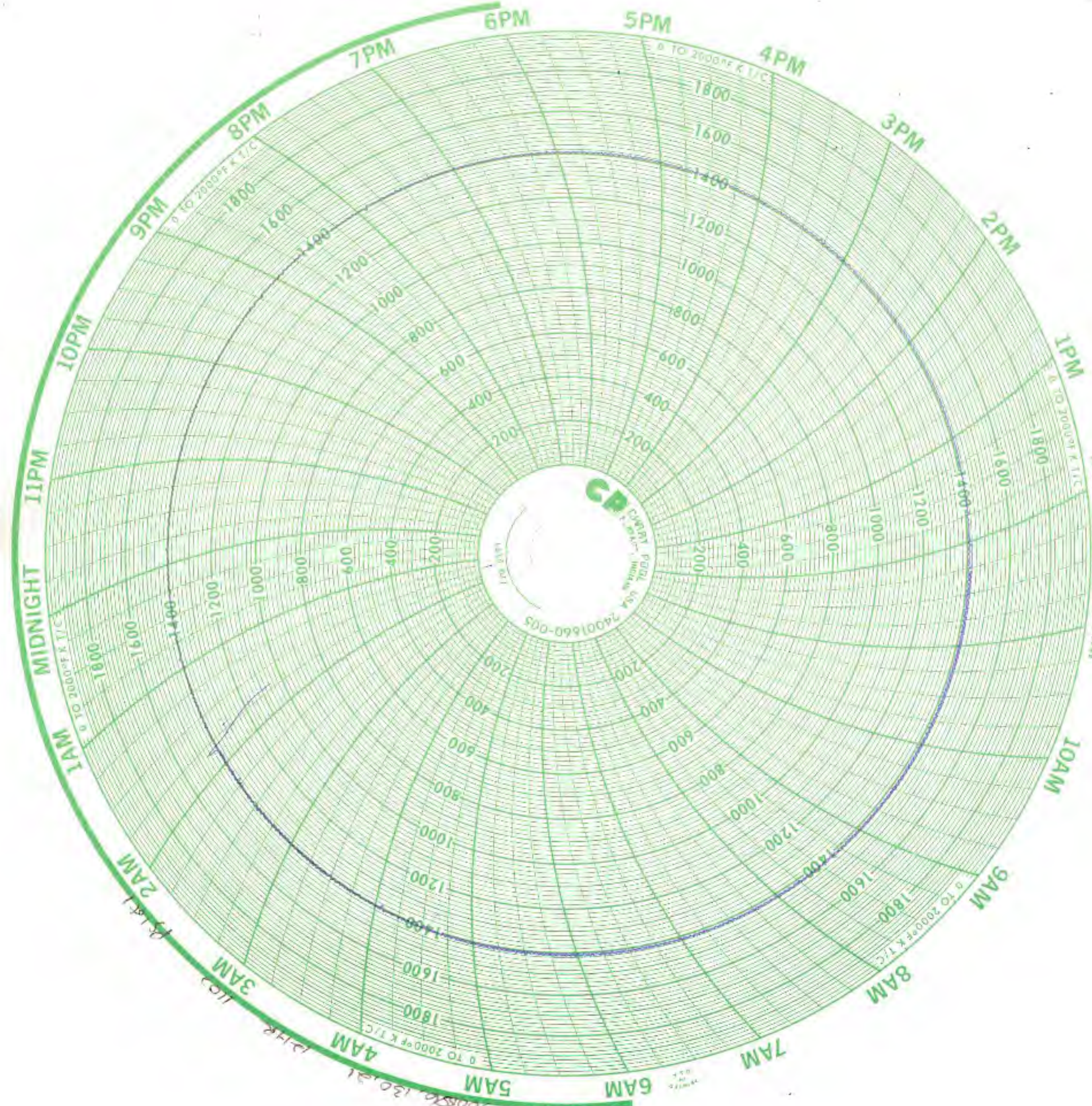
ATTACHMENT 3

Oxidizer Chart



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1PM
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4PM
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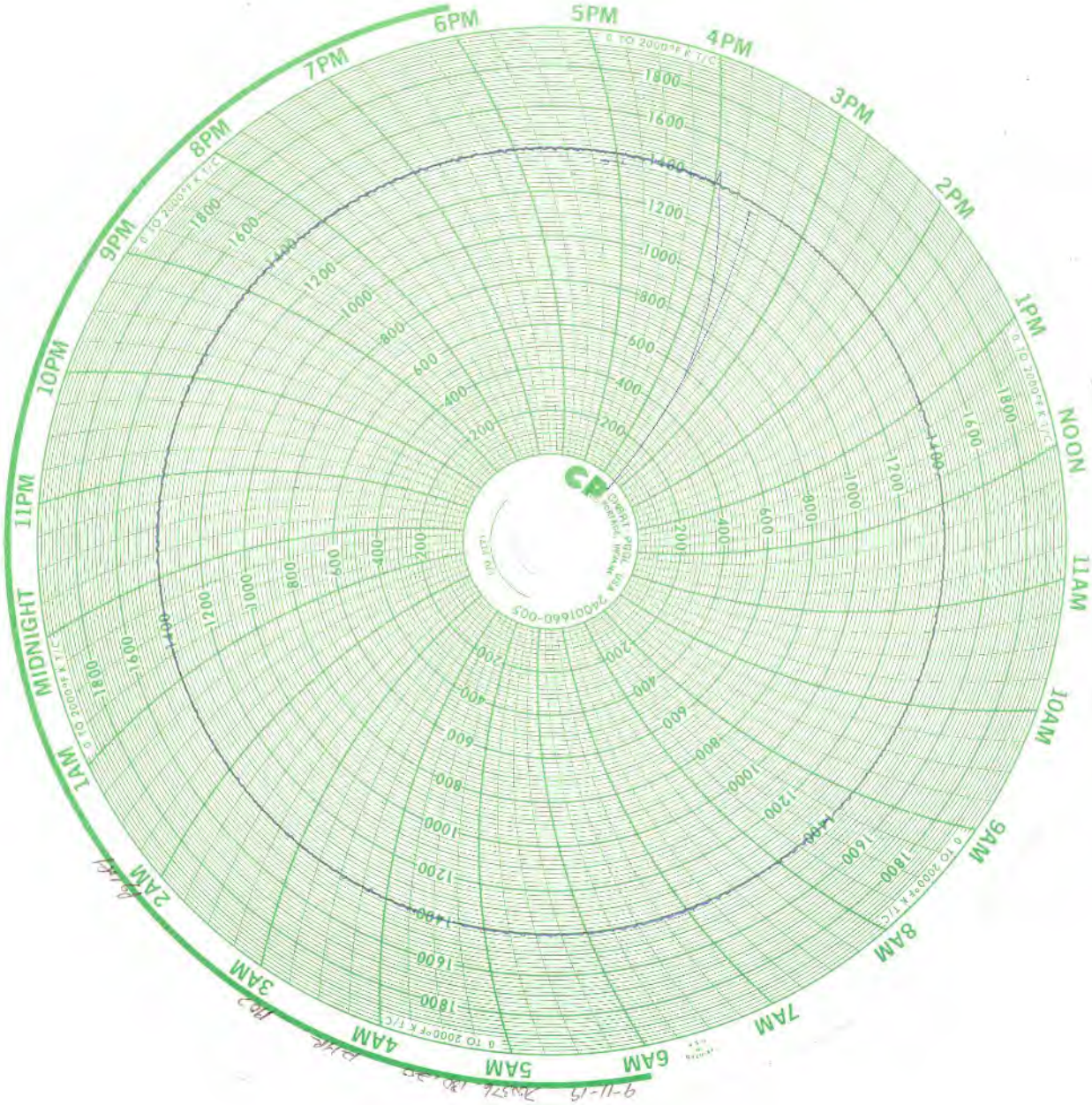
1600
1800
CP
24001660-005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1200
1400
1600
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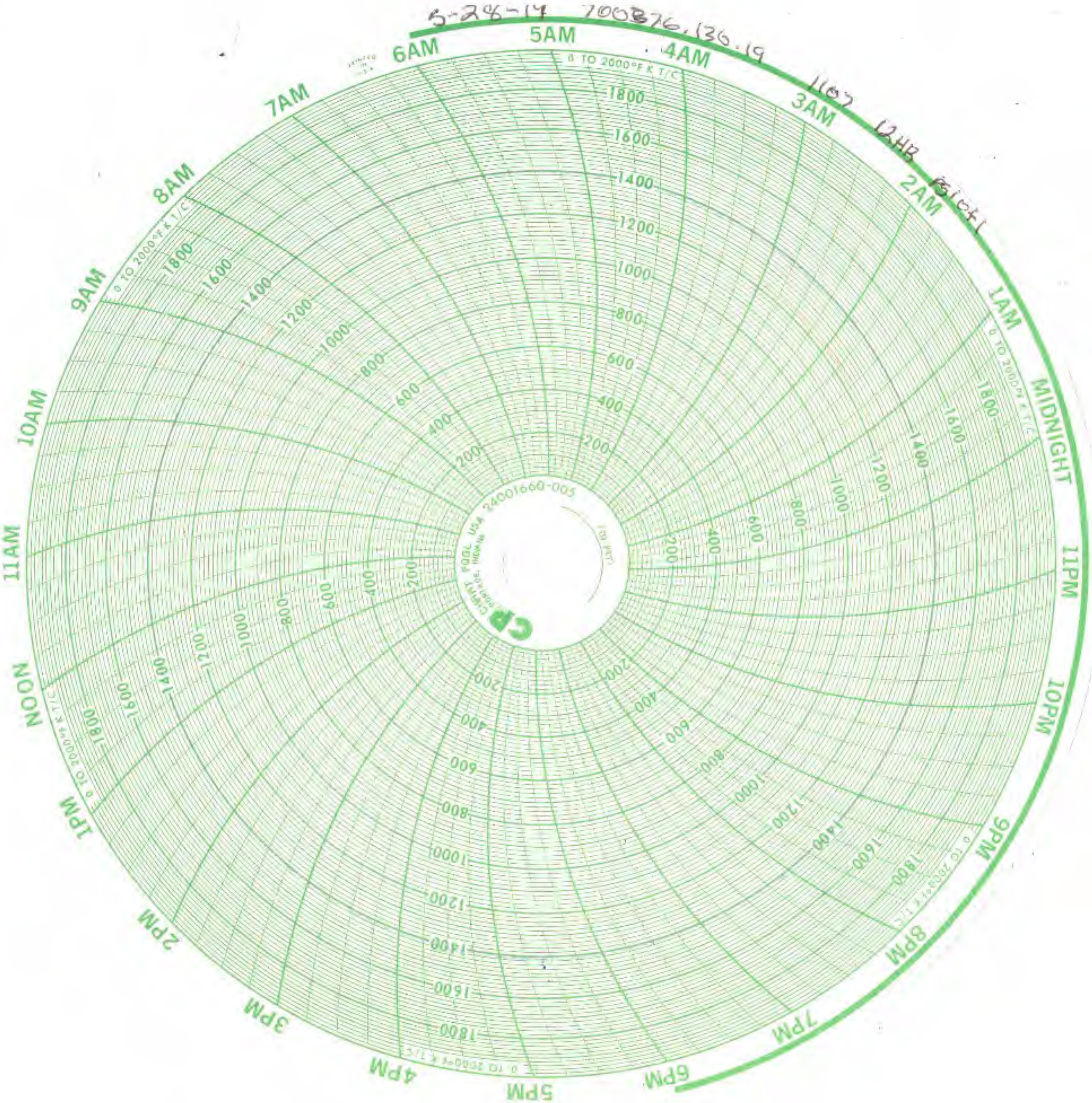
5-28-14
700876.136.19
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24001660-005

Appendix C

Mann-Kendall Trend Test

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	18-Feb-20	Job ID:	PAA12015
Facility Name:	Plains - Vac to Jal #5	Constituent:	Benzene
Conducted By:	PVS	Concentration Units:	mg/L

Sampling Point ID:	RW-1	RW-2	RW-3	RW-8			
Sampling Event	Sampling Date	BENZENE CONCENTRATION (mg/L)						
1	6/1/2011	0.0660	0.034	0.21				
2	5/22/2012	0.1100	0.19	0.3100				
3	6/11/2013	0.0150	0.028	0.0160				
4	6/3/2014	0.1900	0.03	0.0260	0.61			
5	6/16/2015	0.1500	0.0055	0.0190	2.6			
6	5/17/2016	0.0606	0.0176	0.0142	0.41			
7	5/9/2017	0.0180	0.0829	0.0196	0.243			
8	6/12/2018	0.0288	0.00586	0.0505	0.245			
9								
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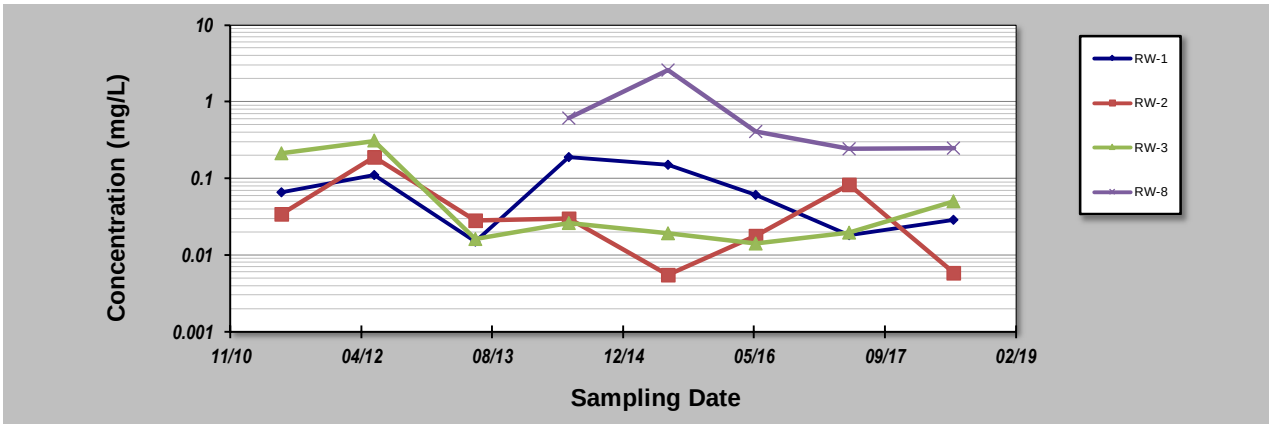
24								
25								
Coefficient of Variation:		0.81	1.26	1.36	1.22			
Mann-Kendall Statistic (S):		-6	-10	-6	-6			
Confidence Factor:		72.6%	86.2%	72.6%	88.3%			
Concentration Trend:		Stable	No Trend	No Trend	No Trend			



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.
4. Nondetectable concentrations listed as 0.0009 mg/L (i.e., <MDL) and indicated in italicized bold red values.
5. All concentrations in milligrams per liter (mg/L)